THE BUILDER

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Architects' Charges and Builders' Quantities.

THE last issue of the Institute *Journal* contains a letter, with the signature "A Fellow," on a point of some practical importance in connexion with the subject of architects' charges. The writer criticises "The R.I.B.A. scale of charges" on the ground that it gives no suggestions or directions as to charges which may fairly and suitably be made for letters and interviews giving advice to clients in regard to proposed building operations, out of which there may arise no specific issue. The Institute scale does indeed give directions as to various matters which are not to be regarded as covered by the ordinary 5 per cent. charge on the cost of an executed building, and also as to the charge which should be made (also a charge reckoned on percentage of estimated cost) for drawings and specification of a building not subsequently carried out; but it gives no rule as to charges which may be made for letters and interviews which lead to no further business. The writer says he knew an architect whose practice it was to charge 5s. for receiving and replying to an ordinary business letter, and he presumes that the same architect would, on the same principle, make a charge for time occupied and information given in interviews which led to no further result; and he adds (and we cannot but agree with him) that "it is strange that this aspect of an architect's account, which looms so large in a solicitor's bill, should have escaped the attention of the R.I.B.A." This is certainly a point which the Council of the Institute should take into consideration. No one can occupy a solicitor's time without paying for it; why should he have a right to take up an architect's time gratuitously?

"A Fellow" then names five points which require clearing up before the Institute makes any application for additional legal powers. For the sake of reference it is convenient to quote them :—

"1. The charge for works not exceeding 1,000*l.*; for which I have suggested a charge of 10 per cent. for the first 500*l.*, and 7½ per cent. for the second 500*l.*, and *pro rata*.

2. For works exceeding 1,000*l.*; for the first 1,000*l.* as above, and for each subsequent 1,000*l.* of outlay 6 per cent., which is in accordance with the American system of the charges of architects.

3. For all structural alterations and additions to old buildings a uniform charge of 10 per cent.

4. Working drawings and details, 1½ per cent., or *pro rata* if not complete.

5. Definite charges for ordinary interviews and correspondence other than those referable to one of the scale charges."

With No. 1 we agree. No. 2, in asking that the first 1,000*l.* of work should be charged for as in No. 1, when the work is above 1,000*l.* and may run to 200,000*l.*, is hardly logical, and is asking too much. The higher charge suggested for work not over 1,000*l.* is justified by the fact that the time and trouble occupied in preparing plans for such work is much greater in proportion to the outlay than in the case of a larger building; but to demand that in the case of the larger work the first thousand should still be charged as if for the smaller work is hardly reasonable or business-like, and we should not think the Institute would support it. The substitution of 6 per cent. for 5 per cent., in all work over 1,000*l.*, ought to be accepted; buildings are far more complicated in their requirements than they formerly were, and it is only just that the rate of professional charge should be raised in proportion. In quoting 6 per cent. as the American system, however, the writer should have mentioned that this has only very recently been adopted—we are not sure whether it has actually come into practical working order as yet—and therefore has not the sanction of long custom.

No. 3 is quite right; alterations to old buildings involve a great deal more trouble than the same expenditure on a new building. No. 4, if we understand it rightly, appears to be proposing an extra charge for detail drawings beyond the 6 per cent. for the building as a whole. This is an innovation which we do not think can be supported; detail drawings are a necessary part of the architect's general work in carrying out the building, and there is no valid excuse for charging extra for them. No. 5, as already observed, deals with a phase of the relations of architect and client which has been strangely overlooked, and ought to receive attention.

We may add that, in any revised scale of charges, we should like to see some recognition of the fact that charging by a percentage on the cost of the building is not the only possible basis of charging, and that an architect is at liberty, if he prefers it, to do as a painter and sculptor does, and charge a previously stipulated sum for his work, independent of its precise cost. The percentage basis of charging has no doubt the sanction of general custom, and the merit of supplying a simple and easily intelligible means of settlement; but it ought not to be regarded as a sacred institution. Whatever may be said for it on the ground of precedent and convenience, it is, on principle, essentially illogical and open to outside criticism, and leaves to the architect who has gained an exceptional position no opportunity for reaping the benefit of that position by making, as a painter or sculptor would, a higher charge than could be commanded by men of inferior talent.

Almost at the same time that the Institute *Journal* with this letter reaches

us, we receive a brief report (printed on another page of this issue) of a recent meeting of the London Master Builders' Association, at which another vexed question, that of the supply of quantities, is discussed with some bitterness. For those whose memory of professional and business matters goes many years back, it is curious nowadays to read the complaint of the builders as to "the hardship imposed upon them by having to take out their own quantities." Why, when quantities were first introduced, no one dreamed of any one but the builder taking them out, for a very good reason—that they only concerned the builder. The fundamental principle of the matter seems to be entirely forgotten. The quantity of material employed is of no consequence to the architect and the building-owner. They do not ask for so many thousands of bricks, so many cubic feet of masonry, so many feet run of this or that moulding; they ask for a building of a special design, dimensions, and materials, shown in (we will assume) sufficiently detailed drawings and described in a sufficiently detailed specification, and they say to the builder—"What can you do that for?" It then becomes necessary for the builder to find out what amount of each class of material he will have to provide; but that is nothing to the building-owner and architect. They do not care what is the length in foot-run of a cornice, or how many thousand bricks are used in a wall, so long as they get the cornice and the wall which the architect designed. That is the fundamental principle of the matter. We are not ignoring existing circumstances. But it is sometimes as well to look back to the first principles of things, and see what they really meant at the outset.

The important position now occupied by the quantity surveyor arose of course out of the constantly increasing and now almost universal adoption of the system of competition tendering. A dozen contractors could not have the plans all at once (though with the present means of photographic reproduction even that might in fact be managed), and a surveyor took out the quantities for all; and in days not so very far back this surveyor was in general appointed by the competing builders among themselves, and paid by them or (more generally) by the successful tenderer. Then it came to be recognised that this arrangement gave possibilities of collusion, and that it was better for the architect to select and commission the quantity surveyor. That is how we arrive at the present position. The system of competition tendering is at the root of it. And as long as this system is general the position must probably remain unaltered.

But if Mr. Godson, who spoke on the subject at the Master Builders' Association, intended to imply that the mere fact of a builder being asked to take out his own quantities was in itself "a hardship," we cannot see the sense of this. Originally, when quantities were first introduced, they were, as we have pointed out, essentially the builder's own concern; and we can hardly suppose that a builder who had taken out quantities in order to make an estimate, would omit to add something to the estimate in consideration of that. So that it really seems that the builder, in declining the "hardship" of taking out the quantities, is in fact driving off into the hands of a surveyor a little bit of business out of which he might have made a legitimate profit for himself.

The prevalence of the system of competition tendering, which practically necessitates the intervention of the quantity surveyor, is a fact of the day, and a fact which we cannot apparently get away from. But (to come back again to first principles) it does not make for the good of architecture. The difference between the solid and ample proportions of walls and details, which we become conscious of in measuring some XVIIth or XVIIIth century mansion, and the comparatively skimped appearance, in such characteristics, of a modern mansion, represents the difference between "measure and value" and the result of competition tendering.

THE LONDON BUILDING ACTS AMENDMENT.

SINCE the publication of our last article on this subject various improvements have been made in the wording of several clauses in that part of the London County Council (General Powers) Act, 1909, relating to the London Building Acts. The Part itself is now IV., instead of V., as previously, and the numbering of the sections and subsections is slightly altered in consequence of modifications introduced into the final text of the Act, which has received the Royal assent, and to-day forms part of the London Building Act.

Sect. (21) is now amended so as to obviate the objection which we raised concerning the previous stipulation that every "metal pillar and girder shall be of iron or steel, or other standardised structural metal." The words "metal pillar" and "metal girder" are substituted, thereby bringing sects. (21) and (22) into line, but the marginal reference to the latter section has escaped correction, for it still contains the words "iron and steel," instead of the word "metal" employed in the text.

Our objection to the inadequate definition of a girder in sect. (21) is answered by modified wording to the effect that "the expression 'girder' shall mean a metal girder or joist."

Sect. (22) has been much improved by corrections and additions, which go a long way towards meeting our previous friendly criticisms.

Subsect. (1) now states very clearly the character of the metal that may be used, saying: "Every pillar or girder shall be of iron or steel, or any other structural metal which may hereafter be standardised by the Engineering Standards Committee." This is a judicious addition, but a statement concerning the quality of iron and steel other than "rolled steel" is still wanting.

Subsect. (2) now provides a further safeguard by stipulating that the party walls (if any) shall be capable of safely sustaining the loads bearing upon them, thereby making it necessary for architects to consider whether the thicknesses of brick or stonework demanded by the principal Acts are adequate, instead of relying implicitly upon an Act of Parliament, as before.

Subsect. (5) contains two concessions deserving appreciation, the first permitting the fire-resisting casing on the upper surface of the upper flange of all internal girders to be 1 in. instead of 2 in. thick, and the second exempting from fire-protection the internal pillars and girders in "buildings of only one story, and not more than 25 ft. in height."

Subsect. (6), while still embodying the concession to which we before called attention, now demands provision against buckling in every girder where "the depth of the web exceeds sixty times the thickness thereof"—a stipulation to which no objection can be taken.

Subsect. (8) has been improved by substituting for the phrase: "Separators shall not be more than 5 ft. apart," the new wording, "Separators, or plates, or other members acting as separators shall not be placed at a distance apart exceeding five times the depth of the girders to which they are attached." The alteration is good as a further safeguard in the employment of a customary, but not entirely commendable mode of forming compound girders.

Subsect. (10) now demands that where bolts are used they shall extend through the full thickness of the nuts, and that the latter shall "be so secured as to avoid risk of their becoming loose." We quite agree with these additions, although wishing that something had been said as to the relative sizes of bolts and bolt holes, and the quality of metal to be employed.

Subsect. (11) (A) includes words making clear the point that the reduced thickness of external walls is not intended to override any of the requirements in the section with regard to the thickness of casing for pillars and girders.

Subsect. (11) (C) is substantially as before, but instead of commencing: "All brickwork and concrete shall be executed in Portland cement mortar," now reads, "All brickwork and work in which terra-cotta concrete stone tiles or other materials are used shall be executed in Portland cement mortar." This alteration, taken with the omission of the former subsect. (12), gets over the difficulty that we pointed out would result from the literal rendering of the last-named subsection. As finally settled, subsect. (11) (C) permits facing materials to be incorporated and considered with the brickwork and other work of external walls, and does not demand that they shall be 4 in. thick (possibly in addition to the wall thickness). We are pleased to see that this point has been satisfactorily adjusted.

Subsect. (16) still requires that all floors and staircases, together with their enclosing walls, "shall be constructed throughout of fire-resisting materials and be carried upon supports of fire-resisting materials." We suppose the Council really meant to say: *All floors and staircases, together with their enclosing walls, shall be of fire-resisting construction and be carried upon supports of fire-resisting construction.* As they have not said this we can only hope that the subsection will be interpreted with reasonable latitude.

Subsect (18) (C), relating to the floor

loads for different classes of buildings, answers our previous query concerning the omission of hotels, hospitals, workhouses, lodging-houses and the like, by classing with floors for domestic purposes those intended "for the purposes of human habitation."

For some reason which we cannot guess the previous definition of the floor load for schools, colleges, and places of instruction has been deleted, and there is still no provision for the floors of churches, halls, and other buildings occupied but not inhabited by the public. To cover these omissions a new paragraph has been added providing that the superimposed load for any floor intended to be used for a purpose for which a superimposed load is not specified shall be provided for pursuant to subsect. (2).

Subsect. (20) has been simplified, and merely specifies the minimum of 30 lb. per square foot for the upper two-thirds of the surface exposed to wind pressure.

Subsect. (21) (A) is improved by the omission of the ratio l/d as an alternative guide to the working stresses in cast-iron and mild steel pillars, and the permissible stresses for mild steel (and consequently for wrought-iron as governed by subsect. (21) (B)) have been modified, most of the alterations giving increased latitude to designers. The same subsect. is materially improved by the insertion of paragraphs (C) and (D) relating to eccentric loading on pillars.

Subsect. (22) slightly increases the permissible stresses in mild steel and wrought-iron, and ignores cast steel as a structural metal.

Subsect. (23) is a new one, limiting the shear on rivets used in double shear to "one and three-quarter times the working shear allowed under this section on a like rivet when used in double shear." There does not seem to be any strong reason for this requirement, for reliable experimental data indicate that the unit shearing strength of steel rivets in single and double shear are practically identical. However, the reduction involves no appreciable increase of cost, and is on the side of safety.

Subsects. (34) and (35) give the County Council power to modify or waive any of the requirements of certain subsections, affecting the fire-protection of pillars and girders, the connexion of adjacent girders intended to act together, the position of girders in relation to floor level, wall thicknesses, the composition of mortar, pillar connexions, the cleaning and painting of metal work, wind pressure, foundation pressure, and the proportions of brick pillars. We have reason for believing that the word *modify* was used with the specific object of obtaining power to abate or reduce requirements and not to make changes that would increase their stringency. This point is illustrated by the opening words of the subsection:—"In order to facilitate the erection of buildings of metal skeleton framework, it shall be lawful for the Council to modify or waive. . . ." Occasions will often arise under the new regulations, as they have arisen under the principal Acts, where relaxation of requirements can justfiably be made. Previous enactments gave too little discretion to the Council, and in consequence they and the district surveyors were often compelled to insist upon the letter of a law that had become obsolete. Subsect. (34) provides a remedy for hardship that would otherwise be inevitable in some circumstances, and one that we may be sure will always be applied with proper regard to the welfare of the public.

Sect. (25) subsect. (1) denotes a movement in the right direction by enacting that the tribunal of appeal shall comprise one member appointed by the Institution of Civil Engineers. Thus the tribunal in future will consist of one member appointed by Government, and three others representing the Royal Institute of British Architects, the Surveyors' Institution, and the Institution of Civil Engineers. No one can possibly cavil at this constitution.

Although the new regulations may not be absolutely beyond criticism, they provide a thoroughly workable solution of the problem which has long confronted architects and structural engineers in London, and bear throughout abundant evidence of the great care which has been taken to eliminate comparatively slight blemishes, and to consider the interests of architects and builders without disregarding the safety of the public.

BUILDING NOTICES UNDER THE LONDON BUILDING ACT.

THE case reported in our "Law Reports" in last week's issue under the heading, "What is a Builder?" raises a question of some importance to subcontractors. The summons alleged that a firm of builders had executed certain building works without having notified the District Surveyor, as required by sect. 145 of the London Building Act, 1894. It appeared that Messrs. Waygood, the lift engineers, had contracted with the owners and occupiers of the premises for the erection of a lift, but that they had subcontracted with the defendant for the execution of the necessary structural alterations in the building. In the contract there was no term introduced as to who should give the necessary notices to local authorities, and neither party had, in fact, done so. The magistrate considered that the case raised a difficult question, but he was of opinion the wrong party had been summoned, and he dismissed the summons.

In large contracts for extensive works there is no doubt that the building agreement would contain a clause as to which of the parties should give such a notice to satisfy the requirements of the Act, and the matter would not be allowed to go by default; but in cases like that under discussion it is difficult to see which party should give the necessary notice. Sect. 145 of the Act imposes the duty on "the builder or other person causing or directing the work to be executed"; but by the defining sect. 5 (33) the "builder" is defined as "the person who is employed to build or to execute work on a building or structure, or where no person is so employed the owner of the building or structure." There is no case apparently dealing with the point, so it is a matter of opinion, but, taking these two sections together and applying them to the facts of this case, it would appear that they would embrace both parties. The defendant in this case was "employed to build or execute work on a building or structure," and so were Messrs. Waygood. Under sect. 145 the "builder"—*i.e.*, the person employed to build or execute work—would have to give notice, but so would "the person causing or directing the work to be executed"; and Messrs. Waygood seem to answer this description even if they were not "builders" within the defining section.

A little assistance is derived by referring to the terms of the old Act, the Metropolitan Building Act, 1855. Sect. 38, which corresponds to sect. 145 of the London Building Act, provides that "It shall be the duty of the builder engaged in building or rebuilding such building or in executing such work" to give the notice; and "builder" is there defined to include "the master builder or other person employed to execute or who actually executes any work upon any building." Those words would, at any rate, have included the defendant. In the uncertain condition of the law all that can definitely be laid down is that the parties to any building contract should see that the matter is defined by the contract, so that notice can be assured from somebody, preferably the person actually executing the structural work.

NOTES.

The Hellenic Society.

ON Tuesday Miss Gertrude Bell, at the meeting of the Hellenic Society, gave an admirable lecture on the Persian Palace of Ukheithar, a little known building some distance westward of the Euphrates, and of which sufficient remains exist to enable its plan and construction to be completely understood. The building was probably of the VIIth or VIIIth century A.D., but its main plan, with a fortified *enceinte* wall and the palace at the inner end of the courtyard, at once recalls Khorsabad, and is a curious instance of the persistence through so many centuries, and under a different race, of the ancient Mesopotamian form of plan for a fortified palace. Photographs of every portion were shown in the course of the lecture; the larger vaults were constructed *par tranches*, with the courses set back at a slope, in the manner adopted in so many examples of Oriental vaulting. There is one dome, over a square compartment, for which the squinch arch is employed at the angles. An interesting feature in the sections of the vaults is the introduction, between two parallel vaults, of a smaller arched space, which not only assisted in affording an abutment to the main vaults, but may, as the lecturer suggested, have also served to keep the interior cool by interposing an empty space between the exterior and the interior, instead of solid haunches of stone or brick; but we should think that the saving of materials and the reduction of weight were the principal objects. The lecture was one of the most able and interesting lectures on an architectural subject that we have ever heard. We understood Miss Bell to say that a monograph publication on the building was in contemplation.

We hope this may appear before long, for the Ukheithar Palace is a building of great significance in regard to some points in architectural history.

L.C.C. (General Powers) Act, 1909.

WE have received a pamphlet* which contains those sections of the London County Council (General Powers) Act, 1909, which received the Royal Assent August 16 last, and which relate to the amendment of the London Building Acts. This part of the Act will in future form part of the London Building Acts, 1894-1909. A note inside the cover states that this publication forms Appendix VI. in Professor Banister Fletcher's fourth edition of the London Building Acts, 1894-1909. This part of the Act contains the provisions with respect to buildings of iron and steel skeleton construction, and relating to the powers of the Council to make regulations with regard to the use of reinforced concrete, etc., and it was fully discussed in our pages before it became law. Local and private Acts being difficult of access to the general public, it will be a convenience to those connected with the building trade to be able to procure these sections in pamphlet form.

Arbitration *versus* Strikes.

THE settlement of two more long-outstanding wages questions on our leading railways within a few days of each other is worthy of comment. Prior to the formation of the Conciliation Boards and the appointment of arbitrators these disputes were a constant menace not only to the companies concerned, but to the community in general, and traders in particular. Strikes and rumours of strikes caused so much disturbance and apprehension that the smooth and successful working of the new, commonsense procedure should not escape appreciative recognition. Sir James Woodhouse, in the case of the North-Eastern Railway, and Lord MacDonnell, in that of the Great Northern, have dealt most thoroughly and comprehensively with the demands of the different grades of workers, to whom their awards should be, and apparently are, welcome and satisfactory. Shareholders may view the matter in a different light, seeing that shorter hours and higher wages inevitably spell reductions in net revenue. But even on that head the sense of security engendered by awards binding for four years should surely be regarded as a valuable set-off, for a large strike might affect their dividends quite as adversely, and without bringing about any satisfactory or permanent settlement at the end.

The Birkenhead Building Mishap.

ON Thursday afternoon last week part of a stable, about 90 ft. long by 27 ft. wide, collapsed during construction, but fortunately without causing serious injury to the men engaged on the work. The lower story consists of a reinforced concrete foundation slab, from which rose columns of the same material supporting reinforced concrete beams and flooring. Upon the exterior beams a brick enclosure was being built at the time of the failure, to form a loft over part of the stable proper. The mishap is attributed to the failure of one or more of the columns, which were of concrete, reinforced by some patented steel bars, and a spiral winding of steel strip. Whether the collapse is attributable to inadequate design, to bad workmanship, or to premature removal of the timbering we do not know. It may have been caused directly by any one or all three of these, and indirectly by the absence of proper supervision. We are informed that the architect originally had before him estimates from different contractors, skilled and unskilled in reinforced concrete work, and that, rejecting estimates based upon well-tried methods, he accepted one at lower price, not representing any particular system, but based upon the merits of a patent bar which is supposed by some people to provide a royal road to design. The resulting failure should cause no surprise, nor should it create prejudice against reinforced concrete work designed by experts and executed by experienced contractors. If an architect is himself an expert in reinforced concrete design he will take great care to employ none but thoroughly experienced contractors. If not an expert, and if relying upon what he may have read in an advertising text-book and upon a contractor new to the work, he is certainly not properly equipped for undertaking reinforced concrete construction. This mishap emphasises and justifies the repeated warnings we have given from time to time.

Site of the Globe Theatre, Southwark.

THE article, with illustrations of maps and views, in the current number of the Institute *Journal*, forms a notable contribution to a still vexed controversy. Mr. George Hubbard, F.S.A., rests his conclusions upon cartographical testimony. Relying upon the old maps, and Visscher's and Hollar's views, he fixes the site as on the *north* side of Maid, or Maiden, Lane (now Park-street), Bankside. So far, Mr. Hubbard is in accord with the theory recently advanced by Dr. C. W. Wallace, of Nebraska, who, we understand, can and will produce legal documentary evidence to prove his contention. But the memorial tablet set up a few days ago indicates that the site lay, albeit at no great distance, within Barclay, Perkins, & Co.'s brewery, on the *south* side of Park-street, where Globe-alley is plotted in Rocque's map, 1746. In the *Times* of October 8 last Dr. William Martin, F.S.A., gives abstracts of documents of title, 1626-1787, to premises belonging to the brewery. For instance, in 1626, Sir Mathew Brand (who pulled down the Globe in April, 1644) conveys certain property bounded on one side by

"the alley or way leading to the Gloabe Playhouse commonly called Gloabe Alley."

A conveyance of 1732 by Wadsworth to Thrale cites:—

"A certain alley or passage called Globe Alley in antient times leading from Deadman's place [Park-street, south] to the then Globe Playhouse."

In 1787 Henry Thrale's executors and devisees conveyed properties in Globe-alley to Barclay & Perkins. Moreover, a Sacrament Token Book, of 1621, which contains the names of parishioners in the order of their habitations, and is preserved in Southwark Cathedral, has entries with subsequent and significant corrections which go to evince that the theatre stood in Globe-alley.

Bruges and the Sea.

GRATEFUL as lovers of the picturesque may be for the gradual accumulation of silt which long ago separated the ancient city of Bruges from the sea, and so preserved its quiet, old-world aspect to this day, the people of Belgium have other views. By the expenditure of some two and a half millions they constructed the new seaport of Zeebrugge, which was intended to revive the material prosperity of a once famous industrial centre. Nevertheless, the great forces of nature still oppose the efforts of man, and, despite persistent dredging, the sea continues to pile up mud and sand to such an extent as to render the new harbour dangerous and of no use save for vessels of small size. So rapid is the accretion of material that last year, after an area of about 250 ft. square had been dredged to the maximum depth of some 32 ft., only a month later the depth had decreased by fully 7 ft. 6 in. This does not indicate a very promising future for the port of Zeebrugge, and those who rejoice in the peacefulness and architectural beauties of Bruges need not fear any immediate transformation of the city into a Belgian edition of Leeds or Bradford.

Old Park, Enfield.

IN the sale of the furniture and effects of this mansion, next week, are comprised some Greek and Roman pottery and glass, old English plate and pewter, Oriental rugs and porcelain, and English cabinet-work of the XVIIth-XIXth centuries. In the grounds are some iron gates and marble vases from Lord Burleigh's house at Theobalds, near Waltham Abbey, which his son, Lord Salisbury, exchanged to James I. for Hatfield, and which was finally pulled down in 1765; several ancient leaden figures; and ornamental stonework from Burlington House, Piccadilly, the South Sea House, and from two of Wren's city churches. Of the fine old leaden cisterns there are illustrations in the *Builder* of November 29, 1902, by Mr. J. Davidson. The Old Park was formerly a part of Enfield Chase, appurtenant to the manor house, or "palace" as it is still called, and is a vestige of the ancient forest of Middlesex. In the time of the Commonwealth it supplied 400 oak trees for the navy. It has latterly been the seat of Mr. Edward Ford; it was at one time owned by George and his son, Christopher, Dukes of Albemarle. Having reverted to the Crown, Old Park was granted by King William III. to William Bentinck, Earl of Portland. Samuel Clayton bought the property, about 230 acres, for 7,000*l.* at the close of the XVIIIth century.

NEW BUILDINGS AT FOLKESTONE. — The Folkestone Town Council have approved the plans of the following new buildings:—Plans, submitted by Mr. S. Vant, owner, architect, and builder, for two houses in Trimworth-road; plans, submitted by Mr. A. Field, owner (Mr. G. H. Camburn, architect, Mr. A. J. Camburn, builder), for additions to No. 1, The Parade; plans, submitted by Mr. H. Holden, owner (Mr. R. Pope, architect, Mr. R. Lowe, builder), for a detached house in Radnor Cliff-crescent.

* London: B. T. Batsford. 1909. 6d.

THE ARCHITECTURAL ASSOCIATION.

An ordinary fortnightly meeting of the Architectural Association was held on Friday last week at No. 18, Tufton-street, Westminster, Mr. Henry Tanner, President, in the chair.

The minutes of last meeting and some nominations having been read and agreed to,

Mr. E. Gunn, Hon. Secretary, announced that the next meeting of the Debating Society would be held on November 12, when papers by Messrs. H. A. Hall (for) and H. W. Brittan (against), entitled "That the Tradition of the XVIIth century is the Only Sound Basis for the Development of a National Style of Architecture," would be read.

He also announced that the annual Conversazione would take place at No. 18, Tufton-street, S.W., on Wednesday, November 24, at 8 p.m., when an exhibition of water-colour drawings and sketches would be held.

Elections.

The following gentlemen were then elected members of the Association:—

C. Grellier, Epsom
E. K. Rowe, Westcliffe-on-Sea
H. M. Whitehead, Brentford, W.
A. B. L. Roberts, Chelsea, S.W.
R. Williams, Clifford's Inn, E.C.
R. S. Cobb, Shortlands, Kent
N. A. Walton, Stockwell, S.W.
J. Basevi, Stockwell, S.W.
W. S. Peto, Stockwell, S.W.
Hon. L. J. Fiennes, Reading.

Votes of Thanks.

The President then moved a hearty vote of thanks to Mr. James Williams for a donation of water-colour drawings of Penshurst Place and the interior, by the late Mr. George Devey; and the interior of Haddon Hall by himself (Mr. Williams).

The motion having been agreed to,

The President moved that a vote of thanks be accorded to Mr. Ernest George, who had given the Association six water-colour drawings by himself, which they were very glad to have. The motion was heartily agreed to.

House Drainage and Sewage Disposal.

Mr. W. D. Scott-Moncrieff then read the following paper on "House Drainage and Sewage Disposal":—

"When I was asked to contribute a paper and read it before the members of the Architectural Association I accepted the invitation with the greatest pleasure, but when it came to writing I found the task was not so easy as at first appeared. All things considered, I came to the conclusion that a somewhat discursive paper might best meet the case. The first difficulty that occurred to me had reference to the section of the Association that ought to be particularly addressed. As a teaching body, which is its most important function, the students should have the first consideration, but they, after all, form only a small proportion of the total membership, so that the full-fledged architect could not be overlooked, and besides, there is a great distinction between the kind of address that is suited to the respective capacities of the first, the second, and the third year student. It is hardly advisable that such an opportunity should in any way take the place either of the text-book or the teacher, because the subject of drainage and sewage disposal is so full of necessary detail that a single lecture is an altogether inadequate medium of instruction. In domestic sanitation there is nothing that can supply the place of actual practice and experience. The most carefully acquired knowledge from a printed book must always leave many points uncovered and difficulties unsolved when principles have to be put into practice, and it is for this reason that I would venture to suggest the necessity for students to be saturated with an understanding of the principles involved, so that when troublesome points arise, even if they are not settled in the best possible way, they may, at any rate, be disposed of without any disregard of the general conditions that are universally accepted as the essentials of success.

Unfortunately we have to deal with cases in which principles that have been accepted as fundamental, and the basis upon which architects have conceived and executed their plans, have been again made the subject of discussion and returned to the melting-pot of the unaccepted. It is here that I must address myself to the senior members of the Association, but in doing so I trust the youngest student may find something to think about, so that when his turn comes to take sides in the controversy he may bring his full share of well-matured argument to assist in the best possible solution of the problems involved.

Disconnecting House-Drains.

I think everyone present will admit that the system of disconnecting the house-drain from the sewer has been so generally accepted, and has been so long in almost universal use, that it may be looked upon as a fundamental principle of good domestic sanitation.

Within the last few years this position has not only been attacked, but has been made the subject of argument from quarters that are too influential to be lightly disregarded. At the present moment the question is under the consideration of a Departmental Committee of the Local Government Board, and I am not aware of the Architectural Profession having taken any strong position as to their claim, their just claim, to take a leading part in the controversy. I think that architects are more interested on behalf of their clients, who are, above all others, the householders and ratepayers of the community, than any other profession, and I am afraid they hardly realise the extreme importance of the issues that have been raised.

Many years ago, but within the recollection of many of us, the only protection that existed against the dangerous intrusion of sewer-gas to the interior of our dwellings consisted of an unventilated soil-pipe provided with a D trap, connected to a pan-closet. The idea of making at some point a complete disconnexion between the house-drain and the public sewer occurred to me, and no doubt many others, as an obvious precaution, but the honour of having put the proposal into actual practice and giving publicity to the system rests, I believe, with the late Dr. Fergus, of Glasgow, who made a manhole in his back garden on the line of his house-drain, where he fixed an old-fashioned form of trap with a disconnecting channel. This arrangement I saw myself more than thirty years ago, and I was keenly alive to its obvious advantages. Soon afterwards the arrangement first used by Dr. Fergus was improved upon by Mr. Buchan, who introduced an improved form of trap, which bore his name, and became widely adopted in connexion with an access chamber. This system of disconnexion has remained, with a few changes in details, the standard arrangement ever since, and its adoption has spread all over the civilised world unchallenged until quite recently, when advocates have risen who almost demand that it should no longer be used and that the disconnecting house-trap should be definitely abandoned.

The first sign of revolt against this widely-accepted device of a disconnecting trap, so far as my information goes, came from the surveyor of one of the outlying London District Councils, who undertook the somewhat laborious task of making a systematic note of the actual working of several hundred disconnecting-traps in his own district and tabulating the results. It appears from this examination that the habits of the householders in that neighbourhood were, to say the least, somewhat peculiar, and seem to have been principally characterised by their indifference to the disappearance of their scrubbing-brushes, which the inspectors discovered in their disconnecting-traps. I think the obvious objection to making this information a ground for doing away with disconnecting-traps altogether is that it would not apply to other districts where the inhabitants are less indifferent to the disappearance of their domestic appliances and where a similar investigation would give totally different results.

Sewer Ventilation and Ventilated Soil Pipes.

The other argument used was of a very different kind, and consisted of a suggestion or claim or demand that the local authorities should be free to make use of the ventilated soil pipes of the householders as a means for solving the problem of sewer ventilation which surveyors have been unable to achieve in any other way.

To this proposal I think there are many serious objections, and the interests, as well as the principles, that are at stake are of such importance that I hope my referring to them very shortly will not be considered out of place. The argument that a certain amount of carelessness is unavoidable in the cheaper kind of houses occupied by people who are altogether indifferent to what goes on with their drainage, as I have said, disappears with the facts supporting it, and can carry no weight where the carelessness referred to does not exist. The other argument that the traps interfere with the use of soil pipes for the ventilation of the public sewers so as to avoid the use of street gratings is in a quite different category. It is true that sewer gratings on the level of the streets is not a sanitary arrangement, but, because sewer ventilation still offers many difficulties, it would surely be a mistake to interfere with the perfection that has been attained in our domestic sanitation by mixing it up with defects in the public sewers with regard to which great efforts are now being made to find a remedy. In certain states of the atmosphere, and especially when the weather is calm, it would be a most risky system that provided for foul sewers being ventilated through the house-drains and soil pipes where the gases would be absorbed by the water in the traps, and discharged as foul odours in the interior of the houses themselves. Against this most serious occurrence there could not be a remedy of any kind, because the disconnexion of which the trap is a necessary adjunct would be prohibited by the by-laws which it is proposed to alter in order to give effect to the new proposals.

Sewers.

Referring to the sewers, Sir Robert Rawlinson, who was a past-master in their construction, laid down the apparently reasonable proposition that if they were laid with an adequate fall and were efficiently flushed they would be self-cleansing, and that being so, their ventilation would be a simple operation if there were no foul gases to be dealt with. This seemed to be a simple solution of the problem by the expedient of avoiding the existence of the difficulty.

I do not know if there are any sewers that comply with the conditions he suggested, and in which no nuisance has ever occurred, but it has transpired in ordinary practice that even sewers with ample falls and efficient flushing still give rise to emanations from the street gratings. It should be observed that in practice the flow varies greatly at different hours of the day and night, and that this must involve the existence of large surfaces that are so fouled as to give rise to the odours complained of. It has also been found that the movement of the air in sewers is of the most erratic kind, due to wind and other causes, and that arrangements that work admirably under certain conditions altogether fail owing to sudden changes which it is impossible to control.

It is difficult to arrive at reliable information as to the immediate effect of the existing arrangements upon the public health, because other conditions overlap so as to make it difficult to fix upon the one which is really accountable for the different death rates. There is certainly no immunity on account

of a rapid fall in a particular line of sewers, because the gases may find their way most freely to the highest level, and the escape from the street gratings may be as bad, or even worse, at the top than at the bottom of the incline.*

As matters stand at present it really amounts to this, that a sewer open from end to end, or, in other words, a well-constructed ditch, is just as much or as little likely to be a danger to health as a sewer with its foul gases escaping in a more concentrated form at any particular point. In this connexion it may be well to refer to the experience of Bristol where no system of ventilation has yet been found which could be adopted in any one district of the city without being detrimental to others, and, this being so, they have not provided sewer ventilation of any kind. All the same, the houses have been provided with disconnecting-traps, and there is no evidence to be found in the death rates arising from diseases in any way attributable to sewer gas, that can be regarded as unfavourable to the existing arrangements when compared with the death rate of other towns where the sewers are ventilated throughout. In any case, it seems a poor remedy for any evils that may exist to ventilate the gases from the sewers on or about the level of the windows where the great majority of the occupants are in the habit of sleeping. My apology for having said so much upon this aspect of domestic sanitation must be that it is a matter seriously affecting the interests of architects' clients, and that the revolutionary proposals I have referred to ought to have their very serious consideration.

Condemning Drains.

I do not know that with the short time at my disposal I ought to take up more of your time in dealing with the subject of domestic drainage, as there is little in dispute beyond what I have already dealt with, and until these new suggestions were made I think we were justified in considering that we in this country had not only been the pioneers of sanitation, but had reached to something very near perfection in its application.

Before going on to deal with the subject of sewage disposal there is one point on which I should make some remarks, as it must often prove to be a stumbling-block in the experience not only of the young architect, but of every member of the profession who has to deal with domestic sanitation. I refer to the question that often arises as to the amount of defect in an existing drain which justifies a recommendation for its complete renewal. As you all know, the method that has been adopted for many years and which has superseded all other devices is the water test. In the case of stoneware pipes this is a severe test, and it is doubtful if it can always be regarded as a fair one. With so many joints made in a way that is never dreamt of as a practical means of bearing water pressure in other cases, such as the conveyance of a water supply, it seems strange that it should be justified in a conduit that is condemned if it is not water-tight when it happens to be used as a drain. Recent opinion as to the relation between bad smells and disease has not confirmed the extreme views that prevailed a few years ago, and in any case no one suggests that a slight leakage of sewage several feet below the level of the ground even inside a house can be a serious danger to the health of the inmates. If this were so, it is obvious that, *pro rata*, a well-manured garden would be almost certain death. Whether this view is a right one or not, if an architect does not condemn a drain for the smallest leakage that is perceptible under a water test it is fairly certain that some other expert, if he is called in, will find it incumbent on him to do so, and in that event the architect who ventured upon taking a common sense estimate of the danger will be looked upon by his quondam client as a man who did not understand his own business. As a matter of fact, this has often occurred in practice, and new drains one after another have been frequently condemned in the same house on a change of tenancy or ownership for some trifling failure in an arrangement which in practice is never subjected to a water pressure greater than that of the passing sewage, which is practically no pressure at all. It was from the consideration of these difficulties that I made up my mind long ago to look at the question, not from the relative merits of stoneware or cast-iron, *per se*, as the best material for the construction of house-drains as if the water test had not come into vogue, but from the point of view as to which was best able to stand the test when applied. This was more than twenty-five years ago. The first large building which was redrained throughout with cast-iron pipes in London was the Foundling Hospital, where I was allowed a free hand, but it was several years before the architectural profession began to see the necessity of considering the subject mainly from the point of view of the water test. It is obvious that, in the case of cast-iron pipes and connexions, the whole system should be capable of standing a high pressure of water without the slightest leakage, and that if any occurs the architect is quite justified in condemning them.

Mr. Norman Shaw's System.

In looking back upon the early days of domestic sanitation I remember the enthusiasm with which many architects took up the crusade against the prevailing defects: the old pan-closets, the foul D traps, the unventilated soil pipes, the dip-stones, and the bell-traps, all of which have become ancient history with which the young architect seldom has to deal with nowadays. Among these enthusiasts was Mr. Philip Webb, but the architect who was most distinguished for his direct and original contributions to the solution of the many unsettled practical problems of that time was the Nestor of your profession, Mr. Norman Shaw. What he made use of in his own practice was an arrangement that not only provided for a double disconnexion of the soil pipe from the house-drain, but did away with the use of a trap underneath the closets and sinks as well. This he accomplished by means of a hopper head into which the soil and sink pipes discharged at their upper extremities, with a corresponding disconnexion on the ground level arranged with a gully-trap. In this manner he avoided the use of any closet or sink traps inside the house, to which I believe he had a strong objection, and he at the same time advocated the adoption of soil pipes of a small diameter to avoid any accumulations upon their internal surfaces. It happens that a case came to my notice only last year in which these arrangements were condemned by a local authority as being inconsistent with their by-laws, and, in consequence, they were entirely removed and ventilated soil-pipes with traps ordered to be put in their place. I mention this because it was found that the system had worked exceedingly well for, I suppose, about twenty years; and it was discovered on the removal of the soil pipes, which were only 3 in. in diameter, that their internal surfaces were as clean as the day upon which they had been fixed. It is probable that if this system had been in universal use the proposal to do away with the disconnecting-trap between the house-drain and the sewer would never have been made.

Sewage Disposal.

Coming now to the subject of sewage disposal, although my remarks should be confined to that part of it which most concerns the architect, namely, the drainage of country houses, it may be well to say something about the general principles which should apply when adopting what is known as the bacterial system of sewage disposal, which was the first to apply, in this country deliberately and in a practical form. It is needless to say that as a matter of fact the final purification of all foul matters has been due to the work of micro-organisms from the beginning of life on our planet, and that their work has been to restore organic wastes to their inorganic elements so as again to allow of their being used for building up the life processes of plants and animals through successive generations.

Biological Conditions.

On the occasion last year of giving the course of Chadwick Lectures on Sanitation at the London University I attempted to explain the processes that are now being invoked for the purification of sewage in a popular form, and, after dealing with the chemical aspects of the subject from the practical side, I endeavoured to describe the biological conditions that are necessary in order to arrive at satisfactory results. As these were put in the simplest way, avoiding technicalities as much as possible, I hope I may be allowed to make one or two quotations. There are two terms, aerobic and anaerobic, which are in constant use, for which we are indebted to the illuminating genius of Pasteur. They represent the dividing-line between two kinds of micro-organisms, viz., those that can and those that cannot live without air; but it is a line that is frequently crossed. Without going into details, it is sufficient to observe that whether or not a particular organism can or cannot work in only one or in either of these conditions the difference between the results achieved by the two classes of bacteria is of the most remarkable kind.

The anaerobic changes come under the general term of putrefaction, and the aerobic of oxidation, but they each break down organic substances into simpler molecular forms. About the great difference that exists between the two processes there cannot be any doubt, seeing that one produces gases that can be used as illuminants, and the other, the aerobic group, those that will put out the light of a candle. The work of the two kinds of organisms, from a practical standpoint, must be judged from the effect they have in carrying on the required changes to the necessary standard of purification in any particular case, and the whole object of the process is to take the greatest possible advantage of their natural functions. Unfortunately the subject has hitherto been approached from an altogether unscientific standpoint, seeing that it has never been subjected to any method of measurement. The result has been, what must always be expected from rule of thumb, that no real progress in a scientific sense has been achieved at all, and though a Royal Commission has been sitting for more than ten years and spending large sums of money upon the collection of a vast accumulation of facts and figures, these can be of little value until they can be correlated in terms of a common standard of comparison, in comprehensible terms. In such a case an architect who is only concerned with practical results, but who is anxious to obtain some reasonable and definite knowledge such as he can obtain in other branches of his profession from text-books that deal with accurate and scientific data, may well be forgiven if he is quite fogged when a client appeals to him for advice on the subject of sewage treatment by bacterial processes, and I am afraid that if he applied to the Royal Commission on Sewage Disposal for specific advice they could only refer him to reports and minutes of evidence and appendices that would make confusion worse confounded and be altogether beyond his comprehension.

One point is fairly obvious, that an architect has to deal with the problem in one of

* London University Chadwick Lectures, 1908.

its simplest forms because, while there are many disturbing factors in the case of town sewage by reason of trade wastes and other complications, he has to deal with it in a fairly normal and uniform condition. It follows that if any real progress had been made in the direction of a standard method of disposal the architect should have been the first to be able to take advantage of it.

Bacterial Processes.

Turning your attention for a few minutes to what actually does occur when micro-organisms convert organic matters into their inorganic elements, it may be well to refer you to the highest results that have ever been obtained in the purification of purely domestic sewage by bacterial processes. It happens that the information is given in a much more detailed form than in any other experiments, because the changes are shown as they actually occur during the process of filtration. They are known as the Ashtead experiments, and are clearly set forth in the Table. Without going into technical details it will be sufficient to point out that the great object is to convert the polluting nitrogenous substances into the mineralised form of nitrogen as nitric acid, in which they were originally assimilated by the life processes of the plant or animal. This is done by the conversion of the ammonia, and you will see from the Table that as the one of these is decreased there is a corresponding increase in the other. This may be regarded as the whole *rationale* of the process. The results were obtained by first subjecting the sewage to the action of the anaerobic or putrefactive fermentation carried on by organisms that do not require air, but assimilate the chemically combined oxygen in the organic matter itself. It was long a question as to how long this putrefaction should be allowed to continue, but as the result of experiments which I carried out for a Committee of the Surrey County Council quite recently it was shown that with a well-arranged filter a wide range in the period of the putrefactive fermentation was permissible without seriously affecting the results.

A Country House Installation.

The most recent installation that has been carried out on these lines has been for Messrs. Forsyth & Maule at a large country house in Berkshire. Here the sewage is first delivered into a chamber in which a deep dip-stone is fixed. The effect of this is to force the incoming sewage in a downward direction so as to allow the heavy inorganic matters to fall to the bottom, provision being made for its removal as occasion demands. The sewage overflows from the forward end of this chamber into the same kind of apparatus which I used in my Ashtead experiments, and to which I gave the name of a "cultivation-tank." The object of this arrangement is to allow the sewage to impinge upon the surfaces of stones, with which the tank is filled, and which provide a permanent nidus or resting-place for the anaerobic bacteria. Whether this is the best arrangement possible may be called in question, but at any rate it is the one which has given far higher results than any other as regards the final effluent it discharges from the filters. The sewage remains in the "cultivation-tank" for a period that depends upon the ratio between the rate of flow of the sewage and the cubic capacity of the tank, after deducting the displacement due to the flints or stones, and this must necessarily vary—much longer during the night, and much less during the day, and so on.

In order to meet the case of the house being empty or full, the tanks are arranged in a group of four. All irregularities are no doubt a disturbing factor, but from the recent experiments referred to a considerable range of variation makes no material change in the results. The effluent from the cultivation-tanks escapes at practically the same level as the intake, and is then carried in a pipe to a distributing apparatus, known as Fidian's, which is self-acting, and is revolved by the weight of the liquid itself, which falls evenly over the surface of the filter and discharges by its own gravity, first through 3 ft. of graded filtering material, and then through another pipe and distributor over and through another filter which was provided to meet the case of having to discharge into a river celebrated for its trout. Although this arrangement is practically the same in most respects as the one which I used partly as regards the preliminary anaerobic tank in 1892, and wholly in the Ashtead experiments in 1897, I do not think it fails in any way to give effect to the most advanced ideas of the present day, but it has one great disadvantage and that is its cost. Although I have devoted nearly twenty years to its development and have contributed a full share of my time in attempting to put the whole subject on a more scientific and satisfactory footing, I cannot but think that in the case of country houses, at any rate, there must be some more simple and inexpensive means of arriving at equally satisfactory results. I must also admit that, although the filtration I have described was based upon the results of long experience, it, too, has been carried out to some extent by rule of thumb, and it is a question with me as to whether it would not have been better to get the actual facts beforehand with regard to this particular sewage. The difficulty is that doing so would have entailed the employment of a chemist and the use of a testing-apparatus beforehand, which in the case of small installations would be regarded as too expensive, though in nine cases out of ten it wodld be far the cheapest procedure in the long run.

In towns, where millions of pounds of the ratepayers' money have been absolutely wasted upon schemes that have been approved by the Local Government, but have proved futile, it is a different matter, because in such cases the cost of arriving at definite information and safe conclusions beforehand would be trifling, whereas in the case of an ordinary country house it may be prohibitive.

Smell and Small Bacterial Installations.

One thing I ought to refer to is the question of nuisance arising from smell in small bacterial installations, and the other is that of the attention required to keep them in proper working order.

I have found that in cultivation-tanks and similar arrangements there is a period in their maturing that generally occurs about a fortnight from the sewage being first applied, when very offensive odours may be expected, but that this passes off in a few days and afterwards smells only occur during certain changes in the weather that are not frequent, such as when it is thundery or during a very low barometric pressure. This, of course, is not pleasant, but in the light of recent knowledge there is no reason to suppose that these odours have any really bad effect on health. Of course, this may not hold good in the case of nervous people who make up their minds that an illness and a smell are in the nature of cause and effect because they noticed a smell so many days before the illness commenced, but the experience of those who have to deal constantly with sewage works, and who are an exceptionally healthy body, shows that these smells are not dangerous. The case of Birmingham may be quoted, where twenty millions of gallons of septic sewage are being actually sprayed into the atmosphere within a short distance of the town without a protest of any kind. This is, I think, carrying matters too far, and, even if my prediction that Birmingham will one day have a rude awakening by reason of an epidemic of some sort, in any case the system is most offensive.

When these cultivation-tanks receive a little intelligent attention they go on doing their work for years without trouble of any kind. One installation occurs to me which was put down by Mr. Philip Webb about fifteen years ago in the neighbourhood of East

TABLE SHOWING SUCCESSIVE STAGES OF MINERALISATION BY NITRIFYING ORGANISMS.

ASHSTEAD EXPERIMENTS, FEBRUARY, 1898.

	Description of Samples.	A Chlorine.	B Free NH_3.	C =N.	D Albuminoid NH_3.	E =N.	F Oxygen consumed.	G O. consumed minus O. required by Nitrous Nitrogen.	H Nitrous Nitrogen.	I =Oxygen required.	J Nitric Nitrogen.	K =Useful Oxygen N_2O_3 to N_2O_5.	L Total Oxidised Nitrogen.	M Available Oxygen, useful O. Nitrate = O. consumed.	N Total Unoxidised N (Kjeldahl).	O Total Organic Nitrogen.	P Total Inorganic Nitrogen.	Q Total Nitrogen of all kinds.
	Effluent from Cultivation-Tank, taken 3 and 5 p.m.	9 0	12·5	10·30	1·50	1·23	9·843	9·843	Nil	—	0·12	0·274	0·12	− 9·57	12·35	2 05	10·42	12·47
Colonies of Aerobic Nitrifying Organisms.	1. Effluent from First Tray.	9·0	10·5	8·65	1 25	1·03	6·694	5·56	0·99	1·13	0·096	0·219	1·036	− 6·47	11·5	2·85	9·74	12·59
	2. Effluent from Second Tray.	8·5	9·0	7·42	1·00	0·82	5·773	4·74	0·90	1·03	0·48	1·09	1 38	− 4·66	11·10	3·68	8·60	12·48
	3. Effluent from Third Tray.	8·5	5 0	4·12	0 60	0·49	4·493	3·60	0·78	0·59	1·87	4 27	2·65	− 0·22	6·00	2·48	6·77	9·25
	4. Effluent from Fourth Tray.	8·0	4 0	3 3	0·35	0·29	1·723	0·98	0·66	0·75	2·76	6 30	3·42	+ 4·58	5·15	1 85	6·72	8 57
	5. Effluent from Fifth Tray.	7·75	1·5	1·24	0·15	0·12	1·28	0·73	0·48	0·55	4·68	10·70	5·16	+ 9·42	1·75	0·51	6·40	6·91
	6. Effluent from Sixth Tray.	8·0	1 75	1·44	0 35	0·29	1·497	0·92	0·51	0·58	4·416	10·10	4 923	+ 8·61	2 25	0 81	6·37	7·18
	7. Effluent from Seventh Tray.	7·5	0·35	0 20	0·30	0·25	0·755	0·755	Nil	—	6·6	15·08	6·6	+14·33	0·85	0·56	6 89	7·45
	8. Effluent from Eighth Tray.	7·5	0 20	0·165	0·65	0·53	0·397	0·397	Nil	—	7·32	16·73	7 32	+16·34	1·03	0·865	7·48	8·35
	9. Effluent from Ninth Tray.	7·5	0·25	0·206	0·60	0·49	0·589	0·589	Slight trace	—	9·0	20·0	9·0	+20·1	0·60	0·394	9·21	9·60

Grinstead, and has worked quite satisfactorily ever since.

Where a sufficient fall is available and an efficient system of bacterial filtration adopted there is no difficulty in disposing of the effluent by passing it into any stream that is not used for drinking. In the case of Staines it is allowed to pass into the Thames direct from the filters. When filtration is not available it requires a very porous soil to admit of the discharge being disposed of in underground open-jointed pipes. In such cases it is better to pass it through long shallow channels on the surface of the land, though this, of course, can only be done when the necessary land is available.

I still think that some more simple devices may be found for dealing with the drainage of country houses than those which I have described, and I hope it may fall to the lot of some of the younger members of the Architectural Association to discover them."

In the discussion which followed,

Mr. W. H. Seth-Smith, who proposed a vote of thanks to the lecturer, said he was interested in the lecturer's remarks about the degree of leakage which might be discovered by the water test and which warranted an architect in condemning a system, for that was a very difficult matter. When they were dealing with a very large system and the pipes outside the house were sunk to a considerable extent and were leaking considerably, it was a question whether they ought to remain so, even although they were at a great depth, because the leakage was apt to cause congestion; but he did not think one was justified in going to the great expense of reconstruction when a leakage was slight. The question of the ventilation of the municipal sewer by the house drain freely above the roof had for architects more than one point of interest. They had all of them felt how hideous were these municipal ventilators standing in the middle of the road or at angle corners of houses, and they would do a great deal to banish them. Where there was no relief for the sewer-gas the pressure on the higher parts of the town, where one expected the best health results, must be very great and of a dangerous nature. The most practical point to architects raised that night was how to deal with the house drainage of a country house on a small site, where there was no public sewer, and he did not see, judging from what had been said, how far Messrs. Forsyth & Maule's instance would help. What were the distances between the house and the septic tank and from the tank to the aerobic beds, and from there to the trout stream, into which he understood the effluent went? It was a comparatively easy problem when the distances were considerable, and in one case in the west of England they had dealt with 3,000 gallons of sewage per day from an institution in a very economical manner, not only as to initial cost, but also in the matter of maintenance. They had nearly a mile to carry the sewage before they could deal with it, but with a fairly gentle fall they discharged into a cesspool which was ventilated. The soil was of the stiffest clay, so that they could not adopt any ordinary system of irrigation, and they had been obliged to depend on some artificial system. The sewage was broken up in that tank and the effluent passed at once to four coarse and fine Dibdin beds of charcoal, about 20 by 12 each, used alternately, and all open to the air. They had a simple valve, which discharged a certain amount of sewage at a time into the upper beds, and the effluent was very good, and passed by the Thames Conservancy. The beds were renewed last year, but for seven or eight years they had been in use and there had never been any trouble. It would be of great practical value to them to receive more information as to the best method of disposing of sewage on small sites. It was easy where there was a chalk soil, where they could dig a deep cesspool and discharge the sewage directly or indirectly through an overflow tank into such a cesspool, where for a great many years it would not trouble anyone. That system was adopted in some large watering-places and it proved a very good one; but where the soil was not of that nature, even where it was soft sand, that could not be done. They had heard of Dr. Poore's system of discharge into a ditch, with a slight fall, the sewage being dealt with aerobically, and he (the speaker) had adopted that system in kitchen-gardens, using the overflow from the cesspool with dip-holes occasionally, so as to use every particle of waste, and it had been a great success. He had used little deep tanks occasionally, and there had been no trouble and scarcely any smell.

Mr. Ernest Herbert seconded the vote of thanks. He said he quite agreed with all the lecturer had said as to the disconnexion of house drains from the sewer. In a small way he had had an example recently in dealing with the drainage of a house in the country where there was an abominable sewage system and drainage ventilating from it to the house. He cut it off at the end of the garden with an ordinary interceptor and manhole, and the improvement was at once remarkable. All architects who had to design moderate-sized country houses had this difficulty of sewage disposal, and there was, as the lecturer said, very little definite information on the scientific side of the question as to whether they were right in adopting one of the filtration systems, or whether they were not often much safer in adopting the cesspit system which could be periodically cleaned out. Whenever he had had to deal with sewage in the country where the water supply was inefficient he had always been inclined to use earth closets, because, even in the house, if there was a man about the place, they could be looked after much better than could a bad water system. It appeared that with most of the vertical anaerobic filtration systems they must, if properly carried out, have a fall of 5 or 6 ft., and in many cases that was impossible to get; and he should like to know what system the lecturer thought the best for a practically level site, or where the soil was not light enough, as was often the case, to take away the sewage by surface filtration. He should also like to know what system the lecturer thought was the best for an ordinary sized house where the client, on the ground of cost, would object to any special sewage scheme. Did not the lecturer think that in some cases it was best to have the old cesspit system? He thought that it might be possible in small houses to supplement the use of a drainage system with manual labour where a gardener was employed. The lecturer had shown much modesty in alluding to the very important pioneer work which he had done in the interests of sanitation, for which he had deserved the full gratitude of architects and engineers.

Mr. Frederick Osborne Smith strongly emphasised the importance of the disconnecting-trap between the house and the sewer, reminding members of the way smoke will beat down into the windows when the smoke test is being applied to drains. With regard to the soundness of drains, he thought it most necessary when near a building that the drains should be quite sound, otherwise there was risk of settlement in the buildings, especially on a clay soil. He was unable to agree with Mr. Seth-Smith when he said that a *little* knowledge was *not* a dangerous thing. It was most dangerous in all matters relating to sanitation. There were so many small details which in one case might be satisfactory while under other conditions they would be quite dangerous. Allowing sewage to soak away in the chalk, as advocated by Mr. Seth-Smith, was one of these dangerous points, as every sanitarian knew that there was a very serious risk in polluting the water supply by this means. He begged to differ with the writer of the paper when he said the disposal of sewage from a country house was the simplest form of the problem. It was most difficult, even to the most enlightened of hygienists and those who had devoted many years to its study. Sewage from a house was spasmodic, whether considered daily or monthly, for sometimes the filters would be overworked and at others the sewage would become stagnant and over-septisized. True, it was necessary to give rest, but, as with human beings, the feeding and resting should be regular to obtain the most healthy conditions. The downward continuous filtration gave the best results, but the filter must be well aerated and the necessary rest would be obtained by the natural intermittent flow, which was the natural course of events when the sewage was discharged from an individual house or building; while that from a town was almost continuous. Grease and disinfectants were also strong factors in increasing the difficulties in dealing with domestic sewage, and after purification more trouble was frequently met in disposing of the effluent, especially on clay soils, where there was no available stream. He mentioned a case where the effluent from a single filter 5 ft. deep was discharged into the ornamental lake in front of the mansion without any objectionable results.

Mr. Horace White said that the lecturer had not dealt with the bugbear of our present-day drainage, *i.e.*, the ordinary mica flap inlet. As to the vexed question of interceptors, he thought they were all agreed on that score, and that it seemed rather a dangerous matter to ventilate sewers by the sides of the house. The question of leaky drains was one where circumstances altered cases considerably—as to the soil, the distance from the house, and how far the drain was down from the surface. As to the Fidian distributor, would the lecturer say what his preference was as to that? It seemed to him (the speaker) that it distributed the sewage in lumps, and the Adams or Candy type seemed better, for with them there seemed to be a more continuous flow.

Dr. E. Stanhope Kitchin drew attention to the lecturer's remark that probably some simpler method of house sewage disposal could be devised. He said that if possible it would be preferable to employ aerobic processes alone as preliminary treatment, instead of any anaerobic ("putrefaction") method, so that there should be oxidation throughout the apparatus. This had been achieved by the slate beds devised by Mr. W. J. Dibdin. In the slate beds the crude sewage was allowed to rest for two hours, and deposit its solid matters in thin layers on shelves of slate, where they were aerobically digested by numerous organisms during the period when the beds were resting empty. It was a fact that there is no nuisance from these beds at any stage, not even when they were open to the bottom on a hot day. Through the agency of the oxygen and the aerobic organisms septic or putrefactive action was prevented. Whereas sludge from a septic or cultivation tank is gelatinous, greasy, and offensive, the residue from the slates was distinctly granular, and on exposure dries to a friable mass indistinguishable from good soil. The effluent from the slate beds was highly amenable to further purification on filters or contact beds, and when used on rotating sprinklers was far less likely to give rise to nuisance than a septic effluent. One speaker had mentioned 5 or 6 ft. as being the necessary fall for contact beds; slate beds and fine contact beds were equally efficient when their total depth did not exceed 1 ft. or 18 in., so that they could be employed under a very wide range of engineering circumstances. One advantage was that if ever they did require cleansing this could be done easily and inoffensively by mere flushing with a hydrant. He commended these beds to the notice of the society in connexion with country-house property.

Mr. H. W. Mann asked if it was an absolute

necessity to have the filter bed exposed to the air in a small installation. Some people objected to them being exposed, and he should like to know if they could be kept covered and made workable.

Mr. R. A. Dibdin referred to the question of depth of slate beds, and explained that the efficient depth was the 2 in. between slate shelves, and that it did not matter whether the shelves were piled to a depth of 5 or 6 ft. or were spread out laterally over a large area; thus there was considerable elasticity in adaptation to the fall of land.

The Chairman, in putting the vote of thanks to the meeting, said he was glad that everyone seemed opposed to ventilating the sewer through the house drain, for he was sure we should suffer in the end if the practice were continued. But they must not forget that there were some very good authorities who took the other view. As to the water tests, he believed that now if a tenant applied the water test to drains without permission from the landlord he was liable for any damage he did to them, for it was held that the test was too severe for the average drain. As to the Norman Shaw system, it seemed undesirable to have a soil pipe discharging just outside a bedroom window, and he should like to know if that was part of the system.

Mr. Scott-Moncrieff: Yes.

The Chairman: Do you defend it?

Mr. Scott-Moncrieff: It has worked admirably.

The Chairman: I would sooner have the pipe outside someone else's bedroom.

Mr. Scott-Moncrieff: Yes; there I agree with you.

The vote of thanks was then put to the meeting and heartily agreed to.

Mr. Scott-Moncrieff, in reply, said that the subject of drainage had an extraordinary attraction for those who were enthusiastic on the subject of drains. In answer to Mr. Seth-Smith's question as to what was being done to solve the problem of sewage ventilation so as to relieve the tension of the alternative of using soil pipes, there was Mr. Shone's ingenious system of sewer ventilation, which had been tried by the very able and painstaking City Engineer of Leicester. Both as to cost and the prospect of success that system seemed to be a better alternative than doing away with the disconnecting trap, which he thought architects ought to protest against on behalf of their clients. The difficulties which the unfortunate architect had to deal with depended largely on the amount of land available, and the problem of satisfactorily dealing with the sewage of a country house on a small area was a most difficult one. Unless some such system as Dr. Poore's could be adopted for a small country house, the ordinary system for which was the cesspool, the problem was, to all intents and purposes, unsolved, and he sympathised with architects, especially if they had an unreasonable client who had great ideas about certain systems. As to the use of the earth closet and the earth system generally, there was a great deal to be said for it. Taking the most advanced views on the subject of sewage disposal, there was a great deal to be said for it so far as the closet itself is concerned; but the architect was still confronted with the difficult problem of sink and bath waste, and that was often as difficult to deal with as the sewage itself. The earth closet certainly did not cope with these wastes, and it came to this, therefore, that in a neighbourhood sufficiently closely inhabited to justify it a public system of drainage was the best solution for all difficulties. In any village community there was no doubt that for the comfort of each householder it was far better to have some common system into which to discharge the drainage—a common sewer put down at the public expense, where the responsibility of the householder ended and the public responsibility begun. He thought that architects would do well to state that view to clients whenever they found themselves in difficulties, because there was no doubt it was the best and most reliable means of giving satisfactory results. The system he had spoken about as having been adopted in a large country house in Berkshire gave a very pure effluent and was very efficient. When he referred to leaky drains he had in his mind cases in which the amount of leakage was very small; that was to say, where it leaked about a pint of water from the entire drain with a fall of perhaps only half an inch in a gully. What was an architect to do in such a case? Was he to condemn the whole of the drains in which the leakage was so small? And, if not, what were the chances that some expert would come along and do so without hesitation, throwing the onus upon the architect for not knowing his business? The remedy he suggested was cast-iron drains, although he knew that the architectural profession had kicked against them for many years; and he suggested them, not because of the merits of cast-iron *per se* as against earthenware—earthenware being really a better material—but because they got over all trouble as to leakage. A cast-iron pipe ought certainly to be watertight. As to an oxidising filter-bed without air, that was a contradiction in terms. There must not only be air in a filter-bed, but ample air. As to how far a cesspit was justified, there were cesspits and cesspits, and there were extraordinary cesspits into which sewage had gone for years with any cleaning out and without requiring to be cleaned out, though those were exceptional cases. The "cultivation" tank was a sort of cesspit, but it had certain advantages as compared with a cesspit, because it was not only much more efficient, but because the effluent obtained, although not perfect, was one which did not lead to pollution when it came into a well aerated stream, the volume of which was sufficient; whereas that would seldom be the case with a cesspit. As to air flaps, they often gave trouble; but a small expenditure on a new flap was not a serious matter to a client who had things properly attended to. One of the faults of the existing flap was that it had not a long life, and, in the second place, it was apt to get out of order from dust and dirt, etc. If the client was anxious about his drains he would not be put to much expense to keep his mica flaps in good order by having a new one when necessary until some more effective device is discovered; a flap when it worked well was not a faulty thing, but a fairly good one. There was a difficulty in dealing with an intermittent flow, and it was a disturbing element no doubt in all bacterial sewage systems; but, in filtration, intermittent discharge, he had always maintained, was an essential condition of success—that was to say, in order to obtain the best results. In his Ashtead experiments he found that the distribution of ordinary domestic sewage should not take place over the filtering material without intervals of seven minutes. It was certain that in these bacteriological systems the element of time was an important factor; the organisms required time to carry on their functions, and it was reasonable to believe that between each discharge of sewage there should be sufficient time for the organisms to do their work. The contact system failed to realise these factors, and he thought that was the general opinion now amongst those who were capable of forming a judgment from long experience. Some reference had been made to Mr. Dibdin's slate beds. Mr. Dibdin had been an able pioneer of the system, and his name was a household word among sewage experts. But there was one claim which had been set forth with regard to the work which was done by these slate beds which he thought was not justified. He had no doubt that after an indefinite time—it might be months—the sludge or slurry on the top of the slates might not be more than 2 in. thick, frequently less than that. The deduction which had been drawn from this by Mr. Dibdin was that all the solids that had passed over or through the bed had been disposed of owing to the slates and to their being sometimes full and sometimes empty and exposed to the air. But if they made an experiment, and put sludge on slates, they would find that under no condition could more than about 2 in. be got to rest on the slates; and he thought that a more reasonable supposition was that each slate was capable of carrying only a certain amount of sludge, and if the time were two years or thirty there would never be more than about 2 in. He did not think that Mr. Dibdin was justified in thinking that the 2 in. were due to the activity of his slate beds. [Mr. R. A. Dibdin: If the solids slip off the slates into the effluent and are not allowed to enter the contact beds, what does Mr. Scott-Moncrieff think becomes of them?] The solids slid off the slates. [Mr. Dibdin: What becomes of them?] They slid off the slates, and for the most part passed into the contact beds unless prevented by some intermediate process. As to distributors, there were many of them, and the Fidian gave good results. It had given results comparable to one which he had designed for the town of Hanley. It had been carefully considered by a Committee of the Royal Sanitary Institute, and he thought it performed its work fairly well; and it had this advantage, that moving very slowly it gave an interval of several minutes in ordinary cases between each of its rotations and between the discharge over any particular point. As to Mr. Norman Shaw's system of discharge straight from a valve closet into a hopper head, it had the same effect on the opinion of the average householder as upon the President, who seemed to have heard of it for the first time. The system had not been adopted generally, though Mr. Norman Shaw had adopted it in his practice. Though it seemed unreasonable to discharge closets into a small soil pipe, the practice had not been a cause of nuisance.

The meeting then terminated.

The next meeting will be held on the 19th inst., when Mr. C. Reginald Enock, F.R.G.S., will read a paper on "The Architecture of the Incas of Peru." On the 20th inst. a visit will be paid to Tilbury to a new Orient steamship, in the decoration of which Mr. A. N. Prentice has been concerned.

LONDON MASTER BUILDERS' ASSOCIATION.

A SPECIAL Council meeting was held at 31 and 32, Bedford-street, Strand, W.C., on Thursday, November 4, the President (Mr. F. G. Rice) in the chair. The meeting was largely attended, and much interest was displayed in the various subjects submitted for consideration.

The "proofs" of the pamphlet about to be issued were considered and instructions were given as to their circulation. A question arose as to the radii observed by the London County Council and the London Master Builders' Association; twenty miles from Charing Cross being adopted by the former body as its limit, while the latter body had a radius of twelve miles from the same centre as set out in the working rule agreements with the different trade societies. Eventually the Council decided to adhere to its own limitations and to limit its operations to the twelve-mile radius.

A discussion on the work of the Organisation Committee took place in which Mr. F. Higgs (Chairman of that Committee), Mr. G. Bird Godson, Mr. Frank May, Mr. Wr. Lawrence, jun., Mr. John Garrett, Mr. Ernest J. Brown, and Mr. H. W. Horner took part.

Mr. G. Bird Godson referred to the question of tendering without quantities being supplied, and to the hardship imposed on builders by having to take out their own quantities. He suggested that the matter be ventilated by deputations from the London

Master Builders' Association to wait upon the Royal Institute of British Architects and other professional bodies concerned. Mr. Ernest J. Brown gave the views of the National Federation, and said it was a matter which every effort would be made to remedy. The Council fully sympathised with Mr. Godson's views, and determined to ask the Royal Institute of British Architects and other bodies to receive a deputation. The resolutions passed at the conference with the Quantity Surveyors' Association on October 13 last had been sent to the members of the Council, and it was resolved to send the following to each member of the Association. The discussion on it was entered into by Mr. Ernest J. Brown, Mr. Frank May, Mr. W. F. Wallis, and others, and it was resolved:—

"That the Conference disapproves of the practice of asking for tenders in competition for works of a substantial value without quantities, prepared by a fully qualified Quantity Surveyor, being supplied, and is of opinion that such quantities should be supplied in all cases when competitive estimates are invited for works expected to cost 500*l.* and upwards."

A letter advocating the preferential employment of registered plumbers was read and the views entertained and expressed upon much the same subject by the Institute of Builders were given. The Council was of opinion that the persons engaged should be judged by their practical and not by paper qualifications.

THE CRYPT OF THE GUILDHALL.

WE referred in a Note in our last issue to the fine mediæval crypt of the Guildhall, which it is now proposed to turn to the uses of a museum in connexion with the existing Guildhall museum.

We now give a view of the interior, from a photograph kindly lent to us by Mr. Sydney Perks, the City Surveyor.

PICTURE EXHIBITIONS.

THE FINE ART SOCIETY.

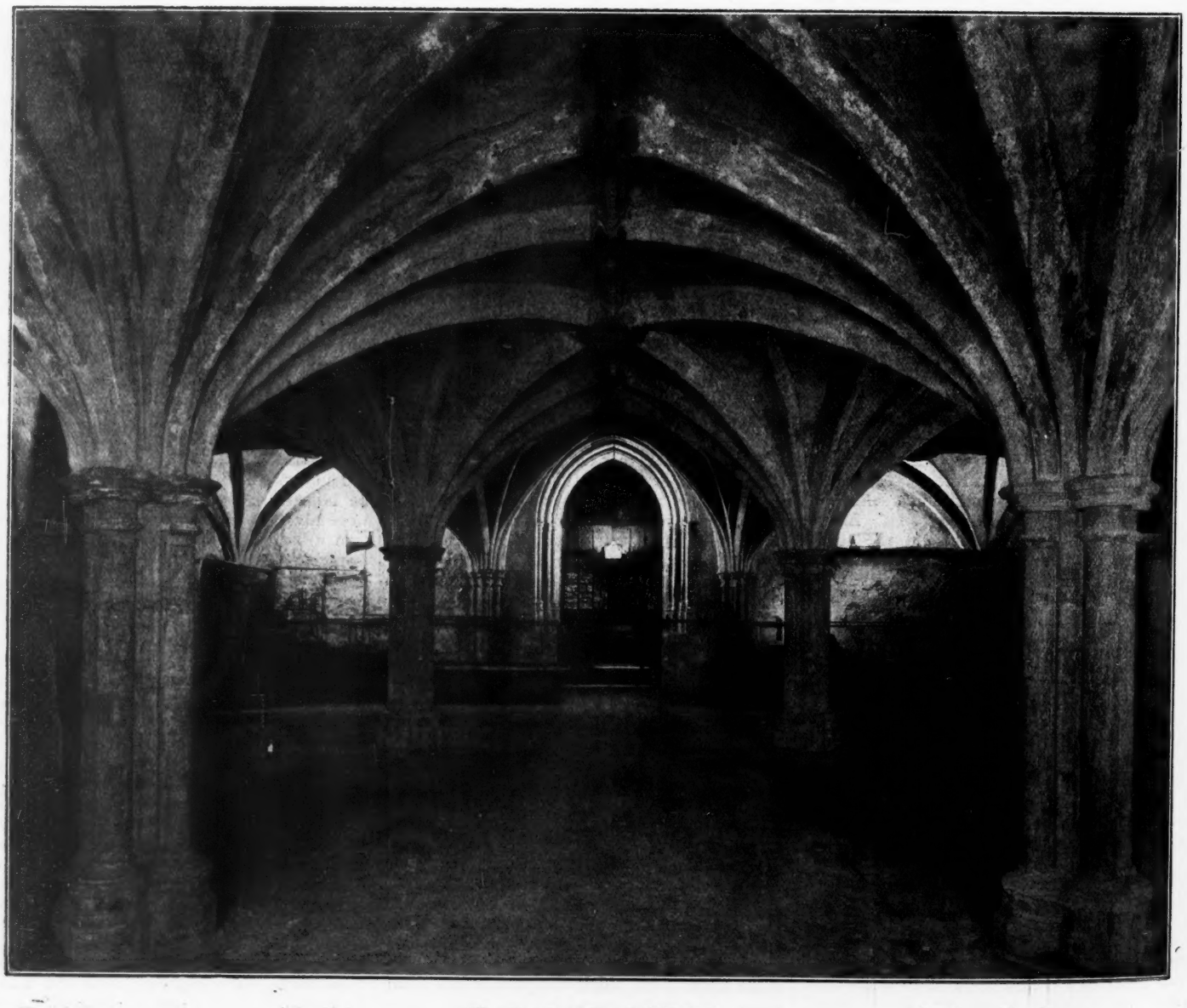
WE have not heard before of "The Society of Country Painters," who hold an exhibition of their works at the Fine Art Society's Gallery; the twelve members are nearly all well-known artists, but we do not see the point of their title, unless it signifies that they are painters who live in the country. There is a good deal of interesting work in the collection, though the members of highest reputation, such as Mr. Tuke and Mr. Arnesby Brown, are not represented by their best work. It is, in fact, mainly an exhibition of sketches and studies. Mr. Kelsey's small sketches of shipping are very good in colour, "Fishing Boats Becalmed" especially, and his "Wall-flowers" is equally good in that respect. We like very much H. L. Norris's water-colour with a distant view of Salisbury Cathedral, and "A Woodland Road" and Mr. Adrian Stokes's "Misty Morning," though the title hardly describes it correctly. Mr. Arnesby Brown's "The Meeting Place" is a good study of a curious old stone bridge; but we must protest against Mr. Ingram's two sketches professing to represent Saltash Viaduct, one of them called "Brunel's Bridge," a title which is a libel on Brunel. Both drawings, as representations of a structure, are ridiculous. It may be admitted that artists may seek to represent the picturesque aspect of an engineering work, rather than the mere structural facts, but they ought to represent a possible structure.

In the adjoining room is a collection of water-colours by Mr. W. Russell Flint, an artist of versatile powers, since his works alternate between highly-finished and quasi-comic illustrations to some of the Gilbert-Sullivan operas, and landscapes painted in a remarkably broad and free style, though with rather a sameness of manner. We do not care much for the operatic pictures, but some of the landscapes are admirable; the study called "A Glorious March Morning," fully answers to its title.

THE BAILLIE GALLERY.

The exhibition of the "Society of Painters in Tempera" at this gallery, includes, amid a rather mixed collection, some small works of considerable interest, especially in regard to colour, in which respect Mr. Balthus's "Bathing Girls" and Mr. Frampton's "A Noble Ladye" are very good. On the other hand, the Hon. Neville Lytton's "Three Graces," an important work as regards design, fails from bad colour, as also another clever design by the same artist. Two important pictures by Mr. E. R. Hughes have already been seen at the Society of Water-Colours, and are not tempera. The works exhibited tend a good deal towards decorative effect; Miss Lanchester's delicate little work, "The Sun Dial," is delightful in this respect; and there are some architectural subjects, including a fine large drawing, "The Spanish Church," by Mr. Sidney Lee, who has made a line of his own in architectural subjects. There is a good carved and gilded mirror frame, with a painted panel, by Mr. Stuttig, and a good piece of illumination and script writing, "Paternoster," by Mr. Mortimer.

Some of Mr. Detmold's drawings of



The Crypt of the Guildhall.

animals, in another room, as illustrations to Æsop's Fables, are very powerful, but he is rather apt to exaggerate his animals into imaginary types for the sake of greater effect.

NOTES FROM FRANCE.

THE Paris Metropolitan Railway Company have erected sixty-eight artisans' dwellings in the Quartier Bercy as houses for their employees; the architect is M. Augustin Rey, who gained an important competition for artisans' dwellings some little time since, when his design was illustrated in the *Builder*. The new cottages are pleasing in appearance; they each include on the ground floor a dining-room, ante-chamber, and kitchen, and on the upper floor two bedrooms and a dressing-room. The roofs are in ferro-concrete, flat, and form a terrace. Each house has a small garden.

M. Albert Ballu, architect to the Algerian Government, announces the discovery at Timgad of the remains of an ancient thermal establishment, and of a Christian monastery, with a baptistry and a large forecourt.

The remains of a Roman villa have been discovered at Chatillon-sur-Sevre, some parts of which are in good preservation, and show the remains of painted decorations surrounded with garlands.

The Académie des Beaux-Arts has awarded the Prix Bailly to a Parisian architect, M. Maistrasse, for his sanatorium at Berck-sur-Mer; and the Prix Roux to M. Martello, pupil of M. Paulin. The subject of the competition for the last-named was "A French Embassy Building in the Far East."

A Committee has been formed with the object of founding an art academy at some site in France, at which provision can be made for fifty art-students who have been unable to attain to the advantages of the Villa Medici.

A monument to the late M. Waldeck-Rousseau is to be erected in the Tuileries gardens. M. Marqueste is the sculptor. The monument consists of a kind of portico containing a portrait bust, around which are grouped various symbolical figures.

Some interesting wall paintings of the XVIth century have been discovered in the church of St. Gervais, at Gisors. They have been found on removing the plaster under which they had been preserved. It is expected that similar frescoes will be found to exist under the plaster in other chapels in the same church.

Excavations at Arles, in connexion with the Marseilles and Rhône canal, have led to the discovery of some of the circular lines of seats of the ancient Roman theatre, as well as of a sarcophagus decorated with winged figures.

THE SURVEYORS' INSTITUTION:

PRESIDENT'S ADDRESS.

THE opening meeting of the new session of the Surveyors' Institution was held on Monday, at No. 12, Great George-street, S.W., when the President, Mr. Alexander Rose Stenning, delivered a Presidential address.

The minutes having been read and confirmed, Mr. Percivall Currey, Hon. Secretary, announced a number of donations to the Library and Library Fund, and a vote of thanks was accorded to the donors.

The President then presented the Gold Medal, annually awarded to the author of the paper which, in the opinion of the Council, is the best of those prepared for reading at the ordinary general meetings, to Mr. J. G. Head for his paper on "Giant London; the Solution of a Great City; Its Growth in Size and Value," read before the Institution in March last.* The President said the paper gave very interesting information as to the growth of London, and it must have taken a long time to prepare.

Mr. Head briefly replied, thanking the Council for the honour conferred upon him.

* See our issue for March 20

The President prefaced his address with an expression of sorrow at the loss sustained during the recess by the death of Mr. John Wornham Penfold. As Honorary Secretary during its early years, and later as Vice-President, Mr. Penfold did much to place the Institution where it stood to-day, and he was glad to say that their late Secretary, Mr. Julian Rogers, had promised to tell them more of those services by reading a paper this session on "The History and Development of the Institution." The Penfold Gold and Silver Medals, which Mr. Penfold founded in his lifetime, and the handsome legacy of 500*l.* which he had left to the Institution would keep his memory green among the younger members of the profession, while by the further legacy of 500*l.* to the Benevolent Fund he had continued an example of kindly generosity to the less successful members of the profession, which he (the President) trusted would be a stimulus and example to them all.

He was pleased to be able to record that the Institution continued to grow in numbers and in public estimation. Only recently its authority had received special recognition in Parliament by the association in the Finance Bill of its President with the Lord Chief Justice and the Master of the Rolls as the Committee to draw up the panel of referees and the rules for regulating the procedure of appeal under the Land Clauses. It was satisfactory to note that the Institution examinations had also received official recognition, for in a recent advertisement, which gave rise to some comment, the appointments were limited to Fellows of the Institution, not, he believed, because it was thought that members of the Institution must necessarily be more experienced than other professional men, but because by the Treasury rule civil servants were required to have passed a suitable examination, and that of the Institution was accepted by the Civil Service Commissioners as fulfilling this requirement.

The President then considered the subject of land. He said the profession were even more closely interested in land than some other classes, who, though just as dependent on it in the long run, were not day by day forced to consider it and deal with it, and their interest could not fail to have been quickened by the legislative proposals now under consideration. A wise policy of development meant prosperity to the profession, while whatever checked and hindered such development must *ipso facto* have an equally adverse effect upon them. Land could not be concealed and could not be transferred to happier countries where taxation of unearned increment was unknown. But the surveyor was concerned, according to the branch of the profession to which he belonged, in the management, sale, valuation or development, and the President dealt with the two main uses to which it could be put, viz., as the source of our nutriment or the site for our houses. He divided land into the two classes of "food land" and "dwelling land." He first considered some of the factors on which the value of land for the production of food or the erection of dwellings depended, and some of the consequences which were incidental to its conversion from food land into dwelling land.

The present tenure of land in this country was the outcome of generations of social advance, and was buttressed by the growth of the traditions of centuries. By whatever mode possession was obtained in the distant past, and however wrongly the claims of the State were set aside by the original possessors, it could not be denied that the present owners, in all but an infinitesimally small number of cases, paid in full for what they now enjoy. Confiscation by the State would be a crime, and purchase a gigantic folly. It might well be that the duties imposed upon holders of land in feudal times ought, transmuted into terms of modern necessity, still to attach to ownership of land. Such obligations, willingly recognised and amply fulfilled by good landlords, had to some extent been recognised of recent years by Parliament in measures such as the Agricultural Holdings Acts, the Small Holdings Acts, the Housing, Town Planning, etc., Bill, and others.

A factor, which bears intimately upon the value of land, and which was often overlooked by those who held the doctrine that the land belonged to the people, was that of the improvements which had from time to time been effected upon and actually incorporated with the land. Even if any justification could be said to exist for the socialistic doctrine, no one could contend with the smallest show of reason that the improvements in or upon it belonged to any but those who had made them or their successors in title.

For good or for evil England had been transformed from an agricultural into an industrial nation. The numbers employed in agricultural pursuits were given in the census of 1861 as 2,010,454; while in the census of 1901 that number has dwindled to 1,071,040. And the capital value of agricultural land had depreciated by about 900 millions sterling in thirty years. It was well when we boasted of England's industrial wealth to remember this tremendous set-off.

If the money, which under the Development Bill it was proposed to devote to the development of agriculture and forestry and to the improvement of communications, was wisely expended, it should be possible for a far larger proportion of our people to find profitable occupation on the land.

Dwelling Land.

As to dwelling land, like food land, it derived its value from what could be got out of it, but here the crop took the form of rent, and that crop would vary largely with the amount which had first been put into the land. It was true that the bare site commanded a yearly rent, varying enormously in accordance with the situation of the land and its nearness to the great industrial centres, but in the vast majority of cases the proportion of the rent of a dwelling which was due to the land on which it stood was relatively very small. And in addition to the mere cost of erection the builder had to incur further expense in the making of roads, the laying of sewers, and in the satisfaction of other demands of the local authorities. These costs might vary considerably in different localities and for different classes of houses, but the principle remained true that before much could be got out of the land a great deal had to be put into it.

The system of building leases, which played so large a part in the development of building land in this country had been hotly denounced by that school of reformers who seemed to believe that the experience of the past was worth nothing. That at the end of a long period, it might be sixty or 100 years, the owner of the land should become by agreement the owner also of the buildings upon it was described by them as rank robbery. But he thought they should all agree that unless and until the whole element of speculation was eradicated from all business, when few of them would care to indulge in it, the reversion of the buildings to the owner of the land was a rational and fair condition of leasehold tenure. The freeholder ageed to forego for a long period any chance of appreciation in the value of the site, and accepted a rent, well secured it was true, but small and in no way commensurate with the value which the land would probably reach after a few years. If such additional value did accrue to the land, the profit was taken during the whole currency of the lease by the original lessee or his successors in title, and till its termination the freeholder had no share in that profit. He was content to exchange his chances of immediate gain for the possible accrual to his children or his estate of a considerable future profit. On the other hand, the leaseholder was enabled for a small

fixed payment to exercise for a long period all rights of ownership over his plot of ground. Instead of sinking a large sum in the mere purchase of the site, he had full use of his capital for as long a period as he was likely to want it himself. It would not be to the advantage of the community if the owner was to be deprived of this future bonus. If the leasehold system was to continue the owner would naturally demand a rent in excess of what he was now willing to take, and the tenant's position would be worsened rather than improved.

Whether he owned the land or merely held it on building lease, it was plain that the man who provided the community with dwellings—and the normal increase of population alone meant a demand in this country for some 50,000 more dwellings a year—had to take big risks and incur heavy expenditure before he could get any return. Next to food and clothing man's chiefest need was a shelter overhead, and the great army which provided for this elementary want ranked next in point of numbers to the metal workers and the tillers of soil. In the census of 1901 the total number of males above ten years of age was estimated at 12,134,259, and the numbers of those employed in our chief industries were given as follows:—Iron and steel, 1,174,180; agriculture, 1,071,040; building, 1,042,864; textiles, 492,175; mining, 800,179. Thus one-twelfth of the total male working population of these islands was employed in this industry, whose raw material, land, the present Government thought it just to tax so heavily. Because some owners were fortunate enough to find their land increasing in value year by year without any labour on their part—though others found the value diminish in spite of every exertion they could put forth—therefore every building owner was to have taken from him one-fifth of any profit which might accrue to him on the land he developed, though no allowance was to be made for any losses he might incur. If so large a share of his profits are to be claimed by the State he must, to protect himself, raise his terms, so that the ultimate effect of the tax would be to make houses more costly. The immediate result of the Budget proposals had been to strike dismay into these men, accustomed though they were to considerable risks. Unable to foresee or calculate the whole of the risks they must run, they had chosen rather to lie idle, with the unhappy result that the whole building trade was paralysed, and many thousands had been thrown out of work. The borough surveyors of six important and representative towns had been good enough to furnish him with figures showing the houses built within the boundaries of those boroughs during recent years, and the approximate number of acres so absorbed by bricks and mortar.

—	1906.		1907.		1908.	
	Houses.	Acres.	Houses.	Acres.	Houses.	Acres.
Brighton ...	—	—	189	8	148	7
Bristol	1,2 9	100	879	75	454	38
Coventry ...	—	—	1,275	35	1,084	30
Leicester ...	648	20	411	17	371	15
Liverpool...	2,453	105	2,342	100	1,850	75
Manchester	2,500	100	2,634	105	2,210	88

Although the figures of the present year were not available for purposes of comparison, those given bear testimony to the diminution of employment and the check to enterprise in the building trade which had occurred during the past year or two, and which must to some extent be attributed to the feeling of insecurity which had existed.

The land-taxers said that the tax on undeveloped land would force into the market a good deal of land which was now held up to the detriment of the community; and they maintained that building land was limited in quantity and the scarcity was artificially aggravated by those who had a monopoly of it. He believed this assertion to be untrue, and even if it could be substantiated, he did not think the remedy proposed was the right one. It was absurd to say that building land was limited in quantity while in every county there were thousands of owners willing, nay, even anxious, to sell. What was meant by the assertion was that certain owners on the outskirts of great centres of population were not willing to sell except at higher prices than were at present offered to them, and that some people were eager to obtain particular plots, which seemed to them specially eligible at less than the present market price. Even if here and there plots of land in thickly populated parts were withheld by their owners from the building market, it by no means followed that the community incurred any loss thereby. The more closely any district was built upon, the more desirable it was in the interests of health and sanitation that as many open spaces as possible should be maintained, and the longer the owners of such plots kept them open the better it was in nearly all cases for the neighbourhood.

On the 18th August last, Mr. John Burns in the House of Commons gave the following return of empty houses and tenements:—

London	42,500	Manchester	9,928
Birmingham	8,461	Portsmouth.....	1,652
Bristol	4,850	Sheffield	4,907
Leeds	6,875	Glasgow	17,000
Liverpool	6,900		

making a total in London and these eight great provincial towns alone of more than 100,000—that was to say about twice as many as were required each year by the normal growth of population in the whole of Great Britain and Ireland. These figures clearly showed that there was no lack of dwellings. If, as might be the case, these particular dwellings did not, from age, position, lack of sanitary conveniences, or other fault, meet the requirements of to-day, the true remedy was to be found in a quite other direction. What was quite certain was that the tendency of mankind at the present day to drift into certain vortices of activity led to an entirely unhealthy congestion of the population, and imposed upon them a crushing burden in the shape of rent. If building land was scarce, the remedy was to provide more of it, and no section of the community was more vitally interested than surveyors in the provision of this remedy and its right application.

Here and there great single employers of enlightened ideas, such as the Levers at Port Sunlight, the Cadburys at Bournville, had created new towns for their own special businesses, while at Letchworth an attempt was being made to achieve a similar success by the co-operation of a number of lesser individuals. Many firms had found it amply repay them to transfer their mills, factories or works from the crowded centres of population to the open country. At a single step they halved the gigantic expenditure in rates, obtained greater ground accommodation at a lower rent, and increased the working efficiency of their employees, who would now live within a few minutes' walk of their daily work, and under conditions as healthy as before they were harmful. Why should not this experiment be followed all over the country? Why should we not create new towns on more scientific lines than the old ones? It should be possible with a comprehensive map of the railway systems of the country and adequate information as to soil, water supply, and the nature of the chief industries in the neighbouring towns, to place one's finger on scores of sites throughout England where similar success would follow in the creation of new centres of population. He put it to them that this was the true remedy for overcrowding and racial degeneration. Many industries could be carried on with almost equal facility in any place where sufficient labour existed, and the means of access were adequate. Offer to such industries the opportunity of cutting down their working costs while adding to their working efficiency, and he ventured to assert that it would be eagerly taken. Population would mechanically transfer itself to the new centre, and we should witness a reversion to the old-time ideal of home industries, though established under modern conditions. The work would no longer be taken to the home, but the homes would have been brought to the work. If at the same time the provisions of the Town Planning Bill were honestly carried out, a noiseless revolution of the most beneficent kind would have been effected in the lives of our town dwellers. No amount of legislation would prevent the operation of the laws of supply and demand. So long as certain areas seemed to offer greater possibilities of gain, so long would the market price of sites in those areas continue to rise, no matter whether the owner be an individual or the State. Instead of the principle of subtraction, if we applied the principle of substitution, at once the pressure upon the more crowded districts would be eased. The scramble for the unwholesome one or two roomed tenements in the dingy slum would gradually come to an end. The profits now said to be unreasonably obtained by the freeholder would no longer accrue. The economic law, silent in its action and irresistible in its effects, would, without any of the machinery of legislation or the harsh inquisition of the tax-gatherer, effectively destroy the power of the harpy who speculates in the misery of his poorer brethren.

A hearty vote of thanks, proposed by Mr. D. Watney, seconded by Mr. G. Langridge, and supported by Mr. C. Munroe, was accorded to the President for his address.

ARCHITECTS' TECHNICAL BUREAU.

[COMMUNICATED.]

IT is proposed to establish a permanent building exhibition of materials, specialities, and fittings at 24 and 25, Hart-street, W.C., and the opinions of architects in London are solicited as to its desirability and utility. There is at present no recognised centre where an architect and his client can examine the various manufacturers' goods collectively with all practical information relative thereto at hand, and which embraces every description of building materials, fittings, and forms of construction, from actual sections of fireproof floors to samples of local bricks and stones, etc., throughout the country. Admission to the exhibition will be free to all architects.

SOCIETY OF ARCHITECTS:

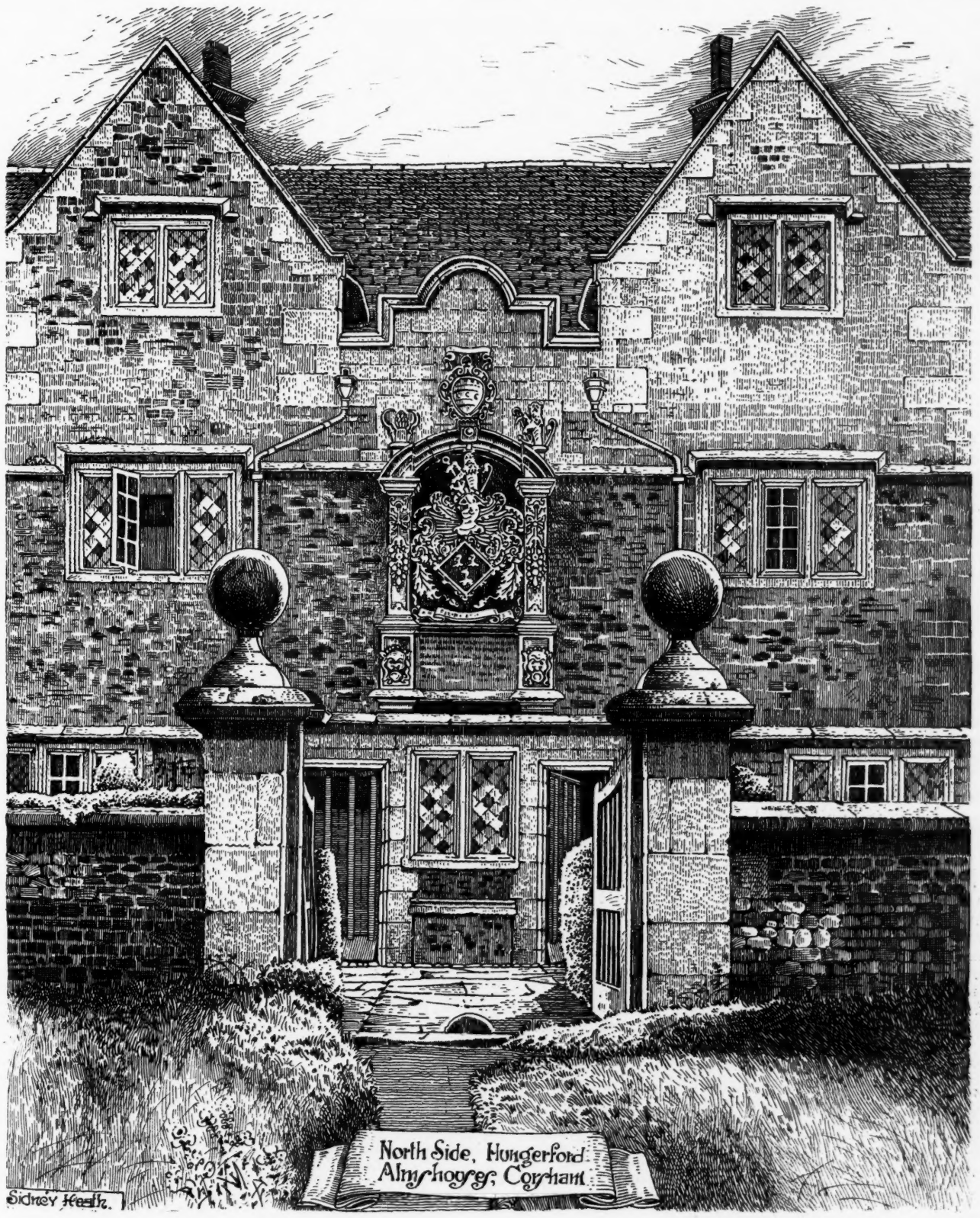
SOCIAL EVENING AND PRIZE DISTRIBUTION.

ON the invitation of the President of the Society of Architects, Mr. George E. Bond, J.P., a social evening was spent by the members and students at the St. Bride Institute, Fleet-street, E.C., on Monday, November 8. The proceedings commenced with the formal annual meeting of the students, with Mr. Bond in the chair, and the students elected their committee for the ensuing session. Mr. Bond then delivered a short address in which he pointed out the advantages offered by the Society of Architects to its students. The walls were hung with a large number of drawings representing the work submitted for the travelling studentship of 1908 and 1909, the work done by the winners of the travelling studentship and of the scholarship, and some of the work done during the sketching visits of the past summer. Of these there are some calling for particular notice. A very excellent design for a secondary school was submitted by Mr. C. H. Hudson, who received the first award of 25*l.* and the Society's silver medal. The sketches made during his visit to Oxford were also of considerable merit. In a few of these there was a tendency towards over-elaborateness in the shading which contrasted with others in which the artist had adopted a bolder style

and a clear method of suggesting the effect of architectural ornament. The quality of the work submitted for the travelling studentship was so good this year that the Council of the Society awarded a special prize of 10*l.* to Mr. G. Ll. Evans. Some excellent sketches by Mr. Evans were also exhibited. Of the scholarship work there were a number of sketches by Messrs. H. F. Trew, F. M. Maddox, and J. R. Lenthart showing considerable promise. This scholarship is open to the younger students, and it must be said that the students had all fallen to some extent into the young students' error, namely, that of producing "woolly" shadows. The defect is due to the incomplete mastery and the not too full appreciation of the limitation of the medium in which the sketches were made. A praiseworthy item of the exhibition was the set of sketches of St. Albans Abbey, Gatton and Merstham churches, and glimpses of old Rochester in pencil and crayon by Mr. J. T. Westbye, made during the students' Saturday afternoon sketching visits. Mr. Westbye carried off the President's prize for this work. Among the other interesting exhibits were some colour sketches in Belgium by Colonel Leslie, R.E., and a collection of photographs by Mr. B. R. Tucker and Miss May Hammond. The prizes were distributed by Mr. Bond after the interval, during which light refreshments were served. A selection of music was performed during the evening by Misses Edith Buchannan, Evelyn Power, and M. Burge, and Messrs. A. O. Butler, Albert Sweeney, and Haydon Pearson.

THE NORTH SIDE, HUNGERFORD ALMSHOUSES, CORSHAM.

THE north side of Lady Hungerford's Almshouses, at Corsham, erected in 1672, differs materially from the west front (a drawing of which appeared in the *Builder* of September 12, 1908), for whereas the latter contains the fine entrance porch, rich in heraldic sculpture, and the windows of the hall, the former is given over to the separate tenements of the almsfolk. A low wall shuts off the building from the road on both north and west sides, and encloses a stone-flagged court from whence access is obtained to the various dwellings. The walls are built of rough stones and ashlar, while such uncompromising details as rain-water pipes are here treated in a manner that helps rather than detracts from the main constructional lines of the building. The gates and piers are similar to those of the west front, and were it not that a small portion of the surrounding ornament has been omitted, the same remark would apply to the highly elaborate panel inserted in the wall, which, together with its western companion, must certainly rank among the most beautiful pieces of Renaissance sculpture in the country. Here we see the arms, crests, and mantling of the founder's family, above which is the demi-lion with an anchor, and here, too, is that most appropriate heraldic cognisance, the garb of wheat and



the sickle, brought together in such happy juxtaposition by the alliance of the Hungerfords, who bore the sickle, with the Peverells, the bearers of the garb. SIDNEY HEATH.

GENERAL VIEW, HUNGERFORD ALMSHOUSES, CORSHAM.

FOR many centuries the Hungerfords were the most powerful family in Wiltshire, with seats at Heytesbury, Farleigh Castle, Down Ampney, etc., and with manor-houses and estates in other places. Eventually they became reduced to a single small manor, Studely-Hungerford, of which nothing now remains but a farmhouse. Here the last of the family died, and was buried in the neighbouring church, where his monument may still be seen. Through failure of issue male the remnant of their once vast estates went by marriage to the Crewe family, where it still remains. The memory of this old family is preserved throughout the length and breadth of Wiltshire by one or other of their heraldic devices, the three interlocked sickles or the wheatsheaf and two sickles, still to be seen on many a panelled wall, many a window and tomb. The family burial-place of the Hungerfords was in Salisbury Cathedral, where they had two beautiful chantries, fully described by Hutchins. These were destroyed by Wyatt in 1789. The two great charities founded by members of the family, the one at Heytesbury (illustrated in the *Builder* of August 21), the other at Corsham, must have awakened feelings of gratitude on the part of hundreds of poor old men and women who have benefited by the charitable deeds of a family, every member of which is long since dead and buried.

The accompanying illustration will convey some idea of the charm of this many-gabled stone building at Corsham, which, except for the insertion of a few XVIIIth century windows and the addition of one or two chimney-stacks, must be exactly as originally built. There was once a free school attached to the foundation, but this portion of the charity has fallen into abeyance. The view given is of the north and west fronts, the latter comprising the entrance-porch and hall windows, etc., the former the separate tenements of the inmates. Both fronts exhibit tablets lettered with the following commemorative inscription:—

"This Free School & Almshouse was founded and endowed by Margaret Lady Hungerford, relict of Sir Edward Hungerford, Kt. of the Honorable Order of the Bath, daughter and co-heire of William Halliday, Alderman of London, and Susan his wife, daughter of Sir Henry Row Knight and Alderman & Lord Mayor of London."

The date of the building is usually given as 1672, the year no doubt of its completion and opening, for the tablet on the north front bears the date 1668. It is surely worthy of note that this XVIIth century charity, with its air of spacious planning, nobly-proportioned rooms, cosy tenements, and solid walls, was not erected as a manorial residence or for rent-paying tenants, but merely as a home and shelter for six destitute old women. Moreover, the survival down to the present day of hundreds of similar institutions makes it clear that, however much they may have suffered during the years immediately following the dissolution of the monasteries, the lot of the needy old folks during the succeeding centuries was not always an unenviable one.

There is little doubt that the four pollarded willows skirting the wall of the west front are solitary survivors of a belt of similar trees that formerly sheltered the building on both sides. They bear evidences of great age, and may well be as old as the structure they still help to protect from the fierce rays of the summer sun and the devastating storms of wind and rain that, gathering force on the western seaboard, periodically sweep over the exposed downs of Wiltshire, Somerset, and Dorset. An illustration of the west front of this fine old foundation appeared in the *Builder* of September 12, 1908, and the north front is shown on page 525.

SIDNEY HEATH.

NEW BUSINESS PREMISES, KINGSWAY, W.C.—Messrs. L. & C. Hardtmuth have decided to erect new premises for themselves in Kingsway. The erection will be commenced shortly, and the work will be carried out from the designs of Mr. J. S. Gibson, the builder being Mr. Jas. Carmichael, of Wandsworth.

NORTHERN ARCHITECTURAL ASSOCIATION.

THE Association held its opening meeting of the session on Wednesday last, when the President, Mr. G. T. Brown, F.R.I.B.A., delivered an address. We extract from this the following passages dealing with special subjects of general interest:—

"I think the time has arrived when, acting in the best interests of the profession, some greater caution than that which at present exists should be exercised in taking into our ranks as students those who perhaps have not realised the responsibilities which from the first devolve upon all who decide to take upon themselves the necessary duties connected with the practice of architecture. The present-day tendency is of course to endeavour to get a class of men of higher educated powers into every profession, and I think the result of that tendency is to be seen in the higher level to which the practice of our art is advanced, helped very largely by the greater educational facilities which exist for the youth of to-day, facilities which, it should be borne in mind are the result of the efforts of the Institute assisted by this and similar societies. In all professions, but particularly in that of architecture, it is essential that none but those with a good preliminary education should enter its ranks, or there are inevitably some to be left behind in the struggle for the survival of the fittest. It becomes therefore a matter for serious consideration whether we should not take steps to ensure that no one shall be admitted as a student to our Association unless he has already passed the preliminary examination of the Institute or some equivalent. I do not think this is too much to ask in the present overcrowded state of the profession; it would probably have a salutary effect on its future condition and would act the more rapidly if such step could be jointly taken by the various provincial societies in all parts of the kingdom.

Charter and Registration.

In speaking to you a year ago I outlined the position of affairs with regard to the movement in the Institute which had resulted in application for a new charter being made to the Privy Council. That charter has now been granted, and I am sure you will join

with me in congratulating the Institute in carrying out quietly and unostentatiously the early stages of what is the most important event in the history of the profession during recent years. Following the granting of this supplementary charter, the by-laws of the Institute were discussed, and amended so as to give effect to and to conform with the supplementary charter. These by-laws have now been submitted to the Privy Council for final approval, and on their return it is expected, by ourselves and others who have agitated more or less for many years for registration, that the Institute will not pause in the work to which they have put their hands, but will proceed with the new Bill to which we are looking forward, and from which we are expecting a great deal.

The first principal change which will occur through the granting of the supplementary charter will be the creation of a new set of members of the Institute, termed Licentiates, who shall be architects of over thirty years of age, who have been either engaged as principals for at least five successive years, or who have been engaged for ten years in the practice or study of architecture.

The second change will be the formulation of the curriculum for architectural education, in connexion with which it is important that students and associates should note that after 1913 no one will be admitted to the final examination for associateship unless they have passed through a course of study in accordance with such scheme or curriculum and passed certain examinations in relation thereto, or proved to the satisfaction of the Board of Education that they have been properly trained as architects.

I have observed a tendency among some of the various critical references to the new class of licentiates to somewhat belittle the idea. The suggestion is after all a serious attempt by the Institute, after much consideration, to get included in its membership those of any repute who are practising or who are connected with the profession. It is the first step towards the inclusion of all those who are not at present connected with the Institute, and I hope, when the revised by-laws are approved and the licentiates' class thrown open, that all will avail themselves of the opportunity thus afforded.

As I mentioned last year, it has been found a most difficult matter to unite all classes in the profession in order to obtain registration, and the step-by-step method which has been adopted by the Institute, of which this is part, should have the support and assistance of us all, as the ultimate results will be the protection of the practice of architecture from the intrusion of any ignorant or enterprising individual who cares to put up a brass plate, and practise to the disrepute of the profession at large, and often to the exploitation and detriment of the general public.

Architectural Copyright.

An important matter which has recently been under the consideration of the architectural profession is the question of the inclusion of works of architecture in the protective clauses of the Copyright Act. Certain changes in the law, so that it should be brought into uniformity with the revised Convention of Berne signed last November, have recently been under the consideration of a Committee of the House of Commons, and the Institute Council appointed Messrs. J. W. Simpson and J. Belcher to represent them before the Committee appointed to examine and report on the matter. Briefly, the effect of the revised Convention being ratified by Parliament would be to secure to their authors the ownership of the drawings and diagrams from which buildings are erected, and prevent the wholesale copying of original designs of buildings which there is ample evidence very frequently takes place.

It is most desirable that, as in the case of literature, music, sculpture, and painting, the rights of the architect to the intellectual property in his original designs should be recognised. The law as it stands at present with regard to the ownership of drawings, by the decision of a case in the Court of Appeal in 1905 (Gibson *v.* Pease), is that the client may demand not only the whole of the drawings and specifications, but also that, if he wishes it, the studies and detailed calculations should be handed over to him, and there is nothing to prevent his making what use of them he pleases, even to the application of them in carrying out other buildings, without the architect receiving any compensation for them whatever.

Cases are known where work such as cottages or small houses has been ignorantly copied by speculative builders, to the discredit of the reputation of the original architect. There are also instances of plans lodged with local authorities having been copied by members of the staff for various purposes, and many architects have had actual experience of such things as work carried out having been reproduced later in an unauthorised way, in which the detail and general effect of the original has suffered considerably.

Means are taken in other countries to protect the interests of the architectural profession, and it is hoped that a Government Bill will be introduced at an early date to deal with the matter. It is gratifying to know that the Institute is taking active steps for the purpose of protecting as far as possible the interests of individual members of the profession, which would be difficult to achieve if attempted in any way except by the officially recognised body."

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Sir R. Melvill Beachcroft, Chairman, presiding.

Loans.—Sanction was given to Deptford Borough Council to borrowing 9,221*l.* for paving works, and to Islington Borough Council to borrowing 4,510*l.* for electric lighting.

Tribunal of Appeal.—The Building Act Committee reported having had under consideration a letter from the Home Office stating that the Tribunal of Appeal has requested the Secretary of State, in the exercise of the power conferred upon him by sect. 179 of the London Building Act, 1894, to fix for a further period the scale of remuneration of the members of the Tribunal, and asking for the observations of the Council on the subject. The scale laid down by the Secretary of State in 1895, and continued in operation from year to year until 1908, was, for each member, 3 guineas for the first hour, and 2 guineas for each subsequent hour of each day's sitting of the Tribunal. The Council has in previous years informed the Secretary of State that it was of opinion that the present rate of remuneration was sufficient. The Council reported that they saw no reason why that decision should be altered at the present time.

Mr. Collins remarked that people were not likely to take full advantage of a Tribunal which cost about 100*l.* a day.

The recommendation of the Committee that the scale of remuneration should be continued was adopted.

Tramways.—The following recommendations were agreed to:—

That the estimate of expenditure on capital account of 44,070*l.*, submitted by the Finance Committee, be approved in respect of the construction, on the underground conduit system of electric traction, of the tramways from Streatham High-road *viâ* Mitcham-lane and Southcroft-road to Mitcham-road.

That the estimate of expenditure on capital account of 40,550*l.*, submitted by the Finance Committee, in respect of the trackwork, etc., for the reconstruction of the underground conduit system of electric traction of the tramway from Rainton-road *viâ* Woolwich-road, Albion-road, and George-street to Chapel-street, be approved.

That authority be sought in the session of Parliament of 1910 to enable the Council to construct the undermentioned new tramways:—

(i.) From Maida-vale *viâ* Kilburn-priory, Alexandra-road, Hilgrove-road, and Adelaide-road to Upper Avenue-road.

(ii.) From Canonbury-road *viâ* St. Paul's-road to Essex-road.

That authority be sought in the session of Parliament of 1910 to enable the Council to reconstruct the undermentioned tramways:—

(i.) Highgate-road.

(ii.) From City-road *viâ* East-road, New North-road, Canonbury-road, and St. Paul's-road to Highbury-corner.

(iii.) From Baring-street *viâ* Southgate-road, Mildmay-park, Newington-green, and Green-lanes to Seven Sisters-road, including the construction of a diversion line along a new street to be formed between New North-road and Southgate-road.

(iv.) From Essex-road *viâ* Ball's Pond-road, Dalston-lane, and Graham-road to Mare-street.

White Hart-lane Estate.—The proposal to spend 56,788*l.* in respect to the erection of cottages on the White Hart-lane estate, mentioned in our last issue, was agreed to.

Improvements.—The recommendations of the Improvements Committee, printed in our last issue, were agreed to.

Smithfield Archway.—The Local Government, Records, and Museums Committee reported as follows:—

"On December 22 and 23, 1908, the Council decided to make a donation of 50*l.* towards the fund inaugurated for the purchase of the superstructure of the archway leading to the church of St. Bartholomew the Great, West Smithfield, so as to preserve the historic interest and architectural beauty of the archway, subject to the Council's contribution not being paid until the remainder of the money required to complete the purchase had been secured. We are advised that the conditions laid down by the Council have been complied with, and that the contribution may now be made."

Prince Henry's Room.—During the three years ended July 25, 1909, the number of visitors to Prince Henry's Room has been 4,978, 5,678, and 8,344 respectively. The total number of visitors for the first three years during which the room was open to the public has therefore been 19,000.

Tender for Lime.—It was agreed that, subject to the result of the usual inquiries being satisfactory, the tender of Mr. L. Sommerfeld, 138, Borough High-street, S.E., for the supply and delivery of 25,300 tons of lime into store at the Barking and Crossness outfall works, at the price of 13s. 9d. a ton, be accepted.

Richmond-hill View.—It was agreed that the estimate of expenditure on capital account of 500*l.*, submitted by the Finance Committee in respect of a contribution towards the cost of securing building restrictions on part of the estate known as "Meadowside," adjoining Marble-hill, subject to the erection of conservatories and greenhouses being permitted, if necessary, on the part of the estate between the house and the estate known as "Meadow-bank," be approved.

Historic Houses.—The Council in May last agreed to grant to Mr. R. S. Charles an option until March, 1911, of taking a lease for ninety-nine years of the site of Nos. 59 and 60, Lincoln's Inn-fields, at a rent of 1,550*l.* a year. The option, however, has not yet been granted. The Improvements Committee now report that the houses are of considerable historical and architectural interest. It is generally agreed, they state that the house (which was divided into two a few years after 1750) was built by Inigo Jones for Robert Bertie, Earl of Lindsey. In 1700 the house was occupied by the Earl of Dorset, the poet, who was thrice Regent during the absence of William III. from the country, and it was also occupied by the Hon. Spencer Perceval, Prime Minister from 1809 to 1812. The façade is in the Renaissance style, of stone, since covered with stucco. The Committee are strongly of opinion that the building should not be destroyed until all other schemes for dealing with the premises have failed. The Council of the Royal Institute of British Architects has interested itself in the matter. The Committee recommended, and it was agreed, that the decision to grant Mr. Charles an option of taking the lease be rescinded.

Lack of Employment.—Authority was given to the Parks and Open Spaces Committee to undertake certain works at Battersea Park, Clapham Common, Ladywell Recreation-ground, Maryon Park, Parliament-hill, Hainault Forest, and Springfield Park, which will give employment to about 625 men for an average period of twenty weeks during the winter. The carrying out of these works will be offered to the Central Body on Unemployment.

The Council adjourned soon after six o'clock.

DEWSBURY INFIRMARY EXTENSION.—A nurses' home and a new operating-theatre have been built in connexion with the Dewsbury and District Infirmary. The nurses' home is a two-story building, giving accommodation for ten nurses, and has cost 3,000*l.*, while the operating-theatre has involved an expenditure of 600*l.* Mr. A. H. Kirk is the architect of the institution.

THE BUILDER

NOVEMBER 13, 1909.

TO CORRESPONDENTS.

"A STUDENT WHO WISHES TO RISE" (we will take the proposal into consideration).

NOTE.—All communications with respect to literary and artistic matters should be addressed to "THE EDITOR" (and not to any person by name); those relating to advertisements and other exclusively business matters should be addressed to "THE PUBLISHER," and *not* to the Editor.

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N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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MEETINGS.

FRIDAY, NOVEMBER 12.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. E. Worth on "Scavenging, and Disposal of House Refuse." 7 p.m.

Egypt Exploration Fund (Royal Society, Burlington House, Piccadilly, W.).—Twenty-third ordinary general meeting. 4 p.m.

MONDAY, NOVEMBER 15.

Royal Institute of British Architects.—Mr. H. Inigo Triggs on "The Planning and Laying-Out of Public Places." Illustrated by lantern slides. 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

Liverpool Architectural Society.—Mr. F. E. G. Badger, Deputy City Building Surveyor, on "Reinforced Concrete and Steel Frame Buildings." Illustrated by lantern slides and drawings, etc.

TUESDAY, NOVEMBER 16.

University Extension Guild (British Museum).—Lectures on Ancient Architecture, by Mr. Banister Fletcher. VII.—"Greek Architecture: the Hellenic Period." 4.30 p.m.

Junior Institution of Engineers (at the Royal United Service Institution, Whitehall).—Presidential address by Engineer Vice-Admiral Henry J. Oram, C.B., on "Recent Warship Machinery." 8 p.m.

Carpenters' Company University Lectures (University of London).—Mr. Halsey Ricardo on "The Renaissance of Architecture in Italy"—V. 6 p.m.

The Institute of Sanitary Engineers (Students' Lecture).—Mr. N. W. Hoskins on "Hydraulics and Hydrostatics." 7 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

WEDNESDAY, NOVEMBER 17.

Northern Architectural Association (Students' Meeting).—Mr. J. G. Smith on Portland Cement Manufacture and Testing." 7.30 p.m.

The Institute of Sanitary Engineers.—Half-yearly general meeting and annual dinner, Holborn Restaurant, W.C. 6.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—7 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

FRIDAY, NOVEMBER 19.

The Architectural Association.—Mr. C. Reginald Enock, F.R.G.S., on "Architecture of the Incas of Peru." 7.30 p.m.

The Institution of Mechanical Engineers.—Mr. Herbert A. Humphrey on "An Internal-Combustion Pump, and other Applications of a New Principle." 8 p.m.

Glasgow Technical College Architectural Craftsmen's Society.—Mr. T. L. Hastie on "A Framed Building." 8 p.m.

SATURDAY, NOVEMBER 20.

Royal Sanitary Institute (Meeting at Nottingham).—Discussion on "The Improvement of City Slums by Housing Reform and Otherwise." To be opened by Alderman T. J. Dabell, Chairman of the Health Committee. 10 30 p.m. Visits in the afternoon.

Junior Institution of Engineers.—Visit to foundation work of the new County Hall of the London County Council, Belvedere-road, Lambeth, S.E. 3 p.m.

Fifty Years Ago.

FROM THE *Builder* OF NOVEMBER 12, 1859.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

OPENING MEETING.

THE opening meeting of the members of the Institute, for the session of 1859-60, was held on Monday evening last, in their new premises, Conduit-street.

The chair was taken by the Right Hon. Earl de Grey, K.G., President.

There were about 220 members and visitors present, including Messrs. Cockerell, Hussey, T. H. Lewis, J. H. Stevens, Roumieu, C. C. Nelson, G. Vulliamy, Ashton, G. Morgan, F. Francis, Tite, Hakewill, Ferrey, Mair, Thomson, Garling, Papworth, J. Clarke, Brandon, S. Smirke, Godwin, Kerr, Horace Jones, Edmeston, Legg, Burnell, Colling, E. Nash, Morant, Houle, W. Slater, Fowler, jun., Sibley, C. H. Smith, E. W. Cooke, E. T. Parris, E. W. Brayley, Abraham, M. Nelson, F. P. Cockerell, J. Turner, T. H. Wyatt, M. D. Wyatt, S. Godwin, John Billing, Mylne, T. L. Donaldson, Cates, Rickman, H. Field, Stride, E. C. Robins, Christopher, Hayward, G. Foggo, T. D. Dighton, T. J. Pettigrew, C. R. Weld, H. S. Pownall, etc., etc.

The minutes of the last meeting having been confirmed, the following gentlemen were proposed as Fellows:—Messrs. George Edmund Street, Edwin Nash, William Allen Boulnois, William Slater, J. Peacock, G. Mayhew, James Fergusson. Messrs. C. J. Knight and Frederick Judge were elected Associates.

Several donations were announced, including a three-quarter-length portrait of the noble president by certain members of the Institute, and a pair of portraits (Kit-Kat size) of the Brothers Adams (?) from Mr. C. Manby. It was also announced that the sum of 238*l.* had been received on account of the removal fund. Thanks having been voted,

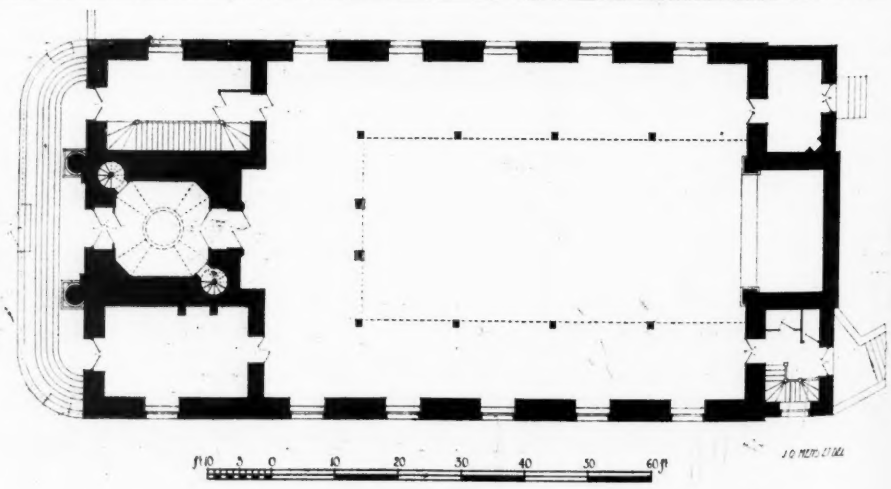
The President observed that the routine business which had just been disposed of showed that the society was going on, and in healthy operation. He was happy to say that he had now the pride and pleasure of presiding for the first time in a place in which the society could honestly say that it had a *locus standi* of its own. They had, it was true, a lodging for many years elsewhere, but they were liable to be turned out at any moment, for although they might have paid their rent punctually enough, others in the same house might not have been so regular, and it was within the limit of possibility that they might have been ejected without being able to help themselves. They had now, however, a local habitation of their own, altogether independent of those below them, and of the Architectural Union Company. They were, it was true, tenants in some sense of that company, but there was a community of interests between them, and there was no reason why they should not go on together for many years to come.

*** The list of names is interesting. Some are entirely forgotten now; others are still familiar. It is amusing to notice that the mistake of calling the architects of the Adelphi "Adams," instead of "Adam," is fifty years old; this venerable blunder is still as flourishing as ever, and we have constantly to correct it. The "many years" which the President hoped for have expanded to half a century; and before long we shall probably be chronicling the next step in connexion with the Conduit-street premises—their entire acquirement and extension by the Institute.—ED.

Illustrations.

CHURCH OF ST. GEORGE-THE-MARTYR, SOUTHWARK.

THE parish church of St. George-the-Martyr was built in Borough High-street upon the site of the former edifice in 1734–6 for 1,200 sittings, after designs by John Price, whose name is inscribed on the foundation-stone. Price died in 1736; by one account his son assisted him in completing the fabric. The cost was defrayed by an Act of 1733 (6 George II., c. 8) out of a grant of 6,000*l.* from the "Fifty Churches" fund. A large sum of money was expended upon the fabric just one hundred years ago; the organ, by Smith, has been often repaired and altered. In 1897 electrical lighting was installed by Messrs. Benson; the church was cleaned and painted throughout, and the ceiling was replaced with one executed in *carton-pierre* by Messrs. Bridgeman, after designs by Mr. Basil Champneys. The design represents cherubim singing the "Te Deum"; the decorated frieze contains the coat-arms of the City Companies who contributed to the cost, with those of London and Southwark. Two years afterwards the Necropolis Company removed a great quantity of human remains to Woking from the crypt by the Home Secretary's order. The crypt had been closed against interments in 1834; in 1855, by direction of the Home Office, the coffins, many of them of lead, were rearranged and covered with charcoal and gravel, but after a lapse of years insanitary conditions became manifest. The Vestry and the Metropolitan Public Gardens Association laid out the churchyard in 1881-6; a heap of Roman pottery and some ornamental terra-cotta work of *temp.* Henry VIII., which perhaps came from Suffolk House—see the *Builder* of May 10, 1902—were found at a depth of about 9 ft., during excavations made in the churchyard for the Long-lane and Tabard-street extension and widening scheme of the London County Council, who reconstructed the boundary walls and erected new entrances to the churchyard and recreation ground, 1902–5.



Plan of St. George-the-Martyr, Southwark.

St. George's appertained to the Cluniac Priory of St. Saviour, Bermondsey, by gift of the Thomas Ardernes, father and son, 1122. In his "Southwark Fair," painted in 1733, Hogarth depicts the former tower, with Kidman "flying" down a rope to the ground.* In that church were married Lilly the astrologer, and General Monk and Ann Clarges.

The design, though comparatively homely, possesses some good points. There is no make-belief about it; the brick is allowed to show itself on the front elevation in such a manner that it is made sufficiently plain that the question of cost was manfully faced by the architect in his design, and the effect is far better than if he had succumbed to the temptation to produce a frontispiece entirely of stone. The base of the tower is marked to the eye by a couple of engaged Ionic columns carrying an entablature with pulvinated frieze and segmental pediment. We could wish the urn removed from its present silly position on the crown of this pediment, and placed where the design really requires it (with the addition of one more), as a balustrade terminal on the returns. The view renders a further description of the tower superfluous. The interior is quite plain, and typical of its period; in fact "neat and commodious." The present ceiling, substituted about twenty years ago for the original one, is hardly successful, and is, moreover, in a very bad condition.

CHELSEA TOWN HALL.

THE illustration shows the eastern end, or pavilion, of the new municipal building lately erected in King's-road, Chelsea, in front of the town hall, built some years ago from the designs of the late Mr. J. M. Brydon.

The materials used in the portion of the building shown in the illustration are granite for the plinth and Portland stone above. Unfortunately the dome was not carried out, as, for some unaccountable reason, the authorities would not allow it to be put up, consequently the building as executed is incomplete and unsatisfactory to some extent.

The carving has been done by Mr. A. Broadbent, the general contractor being Mr. A. N. Coles, of Plymouth, and the architect, Mr. Leonard Stokes. The drawing was exhibited at the Royal Academy of this year.

*The picture, it is commonly stated, was burned in 1807 at Mr. Johnes's seat, Hafod, Cardiganshire. But in a letter in the *Times*, January 8, 1885, the late Sir George Scharf identified it in the Old Masters collection at Burlington House, where it was again exhibited last year by the Duke of Newcastle. *Cfr.* also the "Beauties of England and Wales," 1815, and the catalogue of the Manchester Exhibition, 1857.

DESIGN FOR AN AUTOMOBILE CLUB OVERLOOKING THE PARK OF A CAPITAL CITY.

THE very rapid growth of motor traffic during the last few years both for business and pleasure, particularly the latter, has created a new pastime which has been taken up by many with enthusiasm. It has developed a new means of transport which will in many cases supersede travelling by rail, when time is not the primary object of the journey.

A consequent necessity has arisen for the provision of clubhouses for the devotees of this sport in capital cities and large towns where members may meet together in social intercourse, and for the promotion and discussion of matters connected with the various branches of automobilism. It is probable that within the next few years many clubhouses will be erected for motorists to be used as headquarters when travelling from country to country.

The accommodation provided in this design is that found in any club of importance, with certain additions.

On the ground floor the most important features are the lounge, two floors in height with a barrel-vaulted ceiling, and with galleries on three sides. The dining-hall and smoking-room overlook both the front and back, and from these three rooms access can be obtained to the upper and lower terraces, which command extensive views over the park. Administrative rooms for the use of officers of the club, and where business connected with motoring, etc., may be transacted, are so arranged that they can be approached without entering the club proper, but are at the same time readily accessible from the club.

On the first floor are situated the upper part of the lounge and galleries with access to the balcony over the colonnade, committee-rooms, library, and reading-rooms, and suites of rooms for meetings and the reading and discussion of papers connected with automobile matters, and also a set of rooms to form a ladies' club, both of which have separate entrances from the street.

On the three upper floors accommodation would be provided for over 100 bedrooms, and a separate floor in the roof for the staff. The bedroom accommodation proposed is greater than is sometimes to be found in the larger club premises, but where international and frequent temporary visitors are to be expected, the more liberal accommodation is to be preferred.

In the basement provision would be made for a swimming-bath, Turkish-bath, billiard-room, and laboratory, and the kitchens and offices.

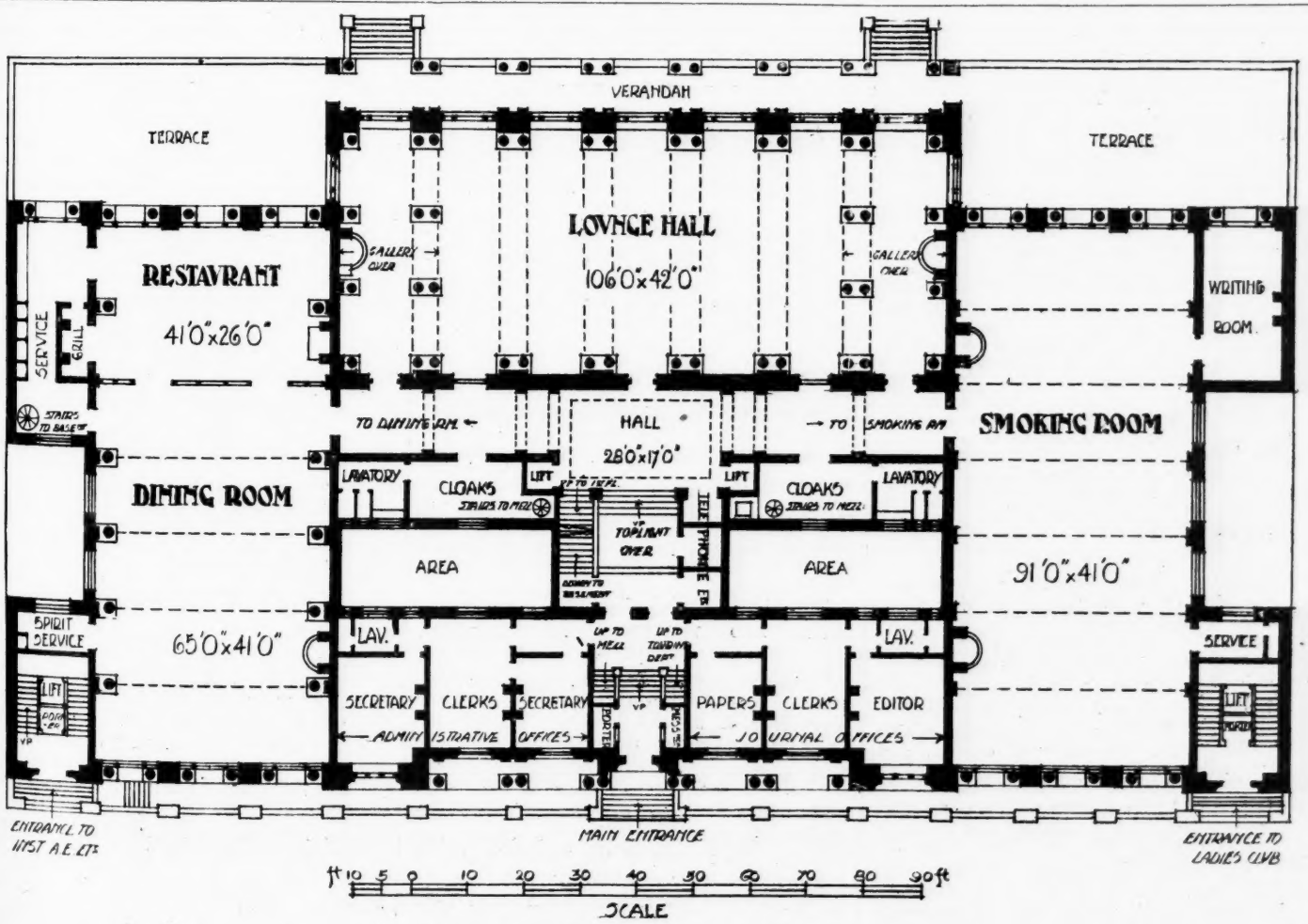
The materials proposed for the elevations are Portland or other stone and green slate roofs.

The perspective view shows the building as seen from the Park.

The design is by Mr. C. Worby Beaumont, and, though it is not a commission or a building carried out, we think it worth publication as a suggestion for a new order of club for which there will probably be a demand from time to time in the near future.

A GARDEN PAVILION.

THIS drawing, which was exhibited at the last Royal Academy, shows the pavilion which was originally executed as an exhibit at the last Building Trades Exhibition, to show the bricks made by Messrs. C. H. Norris, Ltd., of Erith. We remarked at the time on the excellent character of the design. Messrs. Norris showed excellent



Design for an Automobile Club. Ground Plan.

judgment in going to an able architect to design their exhibit, instead of contenting themselves, as many of the exhibitors did, with mere piled-up "trophies" of their materials.

The principal portion of the pavilion was carried out in Messrs. Norris's special broken-colour bricks, 2 in. thick, with wide mortar joints, the portico being paved with 12-in. square tiles.

Messrs. Godson & Sons were the builders, and Mr. R. Frank Atkinson the architect.

"BISHOPTHORPE PADDOCK," YORK.

THIS house, with stabling and coachman's cottage, occupies a nicely-wooded site near the Archbishop's Palace. It is built of 2-in. thick hand-made red bricks, and the roofs are covered with rich red pantiles. All external woodwork is of English oak, and the windows are filled with leaded lights, with wrought-iron casements. Internally the rooms are treated quite simply, with brown English oak finishings.

The general contractors were Messrs. J. & T. Biscomb & Sons, of York.

The whole of the work, including gardens, boundary walls, etc., was executed from designs and under the superintendence of the architect, Mr. Walter H. Brierley, of York.

The drawing was exhibited at the Royal Academy of this year.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Finsbury, East.—That the application of Messrs. Johns, Son, & Watts, Ltd., for an extension of the periods within which the erection of two external iron parcel carriers at the rear of Nos. 46 and 50, City-road, Finsbury, over the passageway leading from City-road to Bunhill-fields, was required to be commenced and completed, be granted.—Consent.

Hampstead.—A one-story bay window in front of a house on the south-eastern side of Barby-avenue, Hampstead, to abut upon the southern side of Greenaway-gardens (Mr. C. H. Saunders for Mr. J. Wilson).—Consent.

Islington, South.—An illuminated sign at No. 26, High-street, Islington (Mr. P. D. Morris).—Consent.

Kensington, North.—Porches and balconies at Nos. 7 to 29 (odd numbers only) inclusive, St. Quintin-avenue, Kensington, and the erection of porches at Nos. 3 and 5, St. Quintin-avenue, and Nos. 43 and 44, Finstock-road (Messrs. Trant, Brown, & Humphreys).—Consent.

Kensington, South.—Retention of an iron sign over the shop cornice at No. 189, Kensington High-street, Kensington (Mr. A. Sykes for Mr. J. Sainsbury).—Consent.

Paddington, South.—An addition in front of No. 20, Cleveland-square, Paddington (Messrs. Nicholson & Corlette).—Consent.

Wandsworth.—A one-story addition at the rear of No. 74, High-road, Balham, to abut upon the southern side of Caistor-road (Mr. J. Boot).—Consent.

Wandsworth.—A building on the southern side of Calbourne-road, Balham, to abut upon the eastern side of Mayford-road (Mr. W. Newton Dunn).—Consent.

Width of Way.

Kensington, South.—A building on the western side of a passageway leading from Kensington High-street to Kensington-court, at less than the prescribed distance from the centre of the said passageway (Mr. R. H. Kerr for Mr. J. Rossdale).—Consent.

Width of Way and Line of Frontage.

Greenwich.—Buildings on the northern side of Tuskar-street, the northern, eastern, and western sides of Woodland-place, the eastern side of Creed-place, the southern side of Trafalgar-road, the eastern and western sides of Fenton-street, and the western side of Miles-street, Greenwich (Mr. A. Griffin for the Trustees of Morden College).—Consent.

Lines of Frontage and Construction.

Battersea.—An iron building on the northern side of Lavender-hill, Battersea, westward of the post-office premises (Mr. E. J. Partridge for Mr. C. Bedworth).—Refused.

Finsbury, East.—A deviation from the plans approved for the erection of an iron and concrete gangway over the public way of Type-court, Finsbury, connecting Nos. 59 and 61, Moor-lane, at the second floor level (Mr. W. Hammond for Messrs. Jaeger & Co.).—Consent.

Width of Way, Line of Frontage, and Construction.

Islington, South.—The retention of an iron enclosure of a temporary character to a hand lift at the Home and Colonial Stores, High-street and Upper-street, Islington (Messrs. Gale, Durlacher, & Emmett).—Consent.

Alteration and Construction of Building.

Islington, East.—An iron and concrete covered way between Nos. 244 to 252, Seven Sisters-road, and Nos. 1, 3, and 5, St. Thomas-road, Islington, and a relaxation of the provisions of sect. 74 (2) of the Act, in respect of Nos. 1, 3, and 5, St. Thomas-road (Mr. H. Shepherd for Messrs. Garner & Somerford).—Consent.

Building for the Supply of Electricity.

Newington, West.—A deviation from the plans approved for the construction of additions to a generating-station at Penrose-street, Southwark, so far as relates to the bricking up of one of the window openings in the first story (Mr. A. Harrison for the Southwark Metropolitan Borough Council).—Consent.

Alteration of Building.

Westminster.—A modification of the provisions of sect. 70 of the Act, so far as it relates to the conversion of a granary into offices at the premises of the London General Omnibus Company, Ltd., Page-street, Westminster (Mr. D. Duff).—Consent.

Uniting of Buildings.

City of London.—The formation of an opening between No. 1, Hatton-court, Threadneedle-street, City, and the adjoining building westward (Mr. C. J. Jones for Messrs. Panmure, Gordon, & Co.).—Consent.—

City of London.—An alteration in the positions of openings in party and division walls at No. 31, Old Change, and Nos. 1A and 3B, Cannon-street, City (Messrs. Still, Wheat, & Luker).—Consent.

Kensington, South.—Rolling steel shutters to two openings between Nos. 111 and 113, Kensington High-street (Mr. F. E. Williams for Messrs. Derry & Toms).—Consent.

Alteration of Buildings and Space at Rear.

St. George, Hanover-square.—A modification of the provisions of sect. 41 of the Act, so far as relates to alterations at No. 36, Dover-street, St. George, Hanover-square (Messrs. Bannan & Rowe).—Consent.

Architectural Societies.

ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.

An ordinary meeting of the Council of this Institute was held at 31, South Frederick-street, Dublin, on November 1, Mr. Batchelor, President, in the chair. A letter was read from the Dublin Commission (Irish Universities Act) thanking the Institute for the assistance rendered in the discussion of the question of architectural education with reference to the establishment of a Chair of Architecture. The house list for new Council was drawn up. The following resolution was passed:—

"The Council desires to place on record its sense of the loss the profession has sustained in the death of Mr. M. A. Hennessy. He joined the Institute in the year 1873. His professional work, chiefly in the south of Ireland, is well known and highly appreciated."

The proceedings then terminated.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.

The first general meeting of the winter session was held on Thursday evening, November 4, at the Society's rooms, 10, Park-street, Leeds. Several new members and associates were admitted, and the minutes of the previous meeting were read and adopted. The President, Mr. Percy Robinson, F.R.I.B.A., in the chair, announced the results of the Society's annual competitions which, although not so keen as in previous years, had called forth work of a higher standard, the selection of sketches exhibited being particularly good. The prizes were awarded as follows:—

Silver medal and President's prize for measured drawings to Mr. P. de Jong.
Prize for design to Mr. P. de Jong.
Prize for sketching to Mr. J. H. Farrar.
Prize for construction to Mr. J. H. Farrar.
Prize for essay to Mr. F. Scatchard.
Halden prize for testimonies of study to Mr. F. L. Kruckenberg.
Sketching Club competition:—
Prize for best set of studies of ancient buildings awarded to Mr. G. H. Foggitt.
Prize for best set of sketches to Mr. P. de Jong.
Prize for second best set of sketches (consolation prize) awarded to Mr. C. T. Whiteley.

The remainder of the evening was occupied in an examination and criticism of the students' drawings by the members present.

The annual smoking concert and distribution of prizes was announced to be held at the Queen's Hotel, Leeds, on Thursday, the 11th inst.

Engineering Societies.

THE SOCIETY OF ENGINEERS.

The following is an abstract of a paper entitled "Some Observations on the Chemistry and Bacteriology of Sewage Purification," read by Mr. David Sommerville (Lecturer in Public Health, King's College, London) on the 5th inst.:—

The intention of the paper is to refer engineers to some fundamental principles connected with the purification of sewage. It is shown that bacterial action is effected through enzymes. The cell consists of colloids and crystalloids in common solution in water, and all cellular reactions are reactions in solution, and based on laws governing their velocities and the conditions of equilibrium. The living cell is an energy transformer, and in all its activities conforms to the requirements of the doctrines of the conservation of matter and of energy. Enzymes are catalysts, and under their influence it can be shown that for a single substance a undergoing conversion into two substances β and γ, the common type of action of enzymes, $\frac{dx}{dt} = k_1 (a - x) - k_2 (\beta + x) (\gamma + x)$ where a is the molecular concentration of the single substance, β and γ molecular concentrations of the two into which it is converted, and x the change in concentration in time t. Enzymes, unlike inorganic catalysts, are rendered inactive by rise of temperature. Enzymes are colloids, and as such subject to the laws governing the phenomena known as "adsorption." Enzymes are capable of reversible action, and consequently affect syntheses as well as dissociations.

Sewage is composed of a watery mixture of proteins, carbo-hydrates, fats and various inorganic matters. The organic matters exist in solution and in particulate form. Colloidal solutions are constantly encountered. Sewage is charged with bacteria and enzymes, and when of domestic type contains, in addition to air, water and soil organisms, dominant types indigenous to the human intestine. Sewage carries the organisms and enzymes of its own putrefaction. The chemical reactions of the putrefactive stage are closely analogous to those which effect the digestion of food-stuffs in animals. Protein dissociation occurs in two stages: primary—albumoses, peptones and peptides; and secondary—amino-acids. Reference is made to the constitutional structure of a few of the more commonly occurring amino-acids. The hydrolysis of carbohydrates and fats is simple when compared with that of proteins.

Most species of bacteria in sewage and soil are capable of forming ammonia from organic matter. Free nitrogen is liberated by some sewage bacteria and atmospheric nitrogen fixed by others. Certain bacteria reduce nitrates to nitrites and ammonia; others reduce nitrates and nitrites to NO and N_2O. Where unlimited oxygen is supplied nitrification predominates, but where oxygen is limited denitrification

appears. In certain cases it may be advantageous to transform as much as possible of the nitrates and ammonia into free nitrogen.

The presence of humus in soil adds to its nitrifying power, and beds performing nitrification poorly may have their activity increased by the addition of humus from other beds working normally. The bulk of the matters left on the filters remains unchanged for a considerable time. The sick sewage bed is like the sick man who overeats. The aerobic method of treating sewage has the best of it all the way round. Bacterial activity is by no means the only activity engaged in the purification of sewage. It is only an assumption that when a sewage is nitrified pathogenic bacteria have been destroyed.

Legal Column.

The Finance Bill and the Building Trade.

There is so much common-sense good advice in the letter addressed by Mr. J. Howard Colls to the General Union of Carpenters and Joiners, and published in the *Times* of the 9th inst., that it is a matter for regret that it was not addressed to the Cabinet rather than to the carpenters and joiners. The occasion for the letter was a reply to an appeal on behalf of the unemployed in the above branches of the Union, and Mr. Colls in striking terms points out that much of the distress is due to the attacks that have been made on the class that has command of capital, which attacks have created such a feeling of insecurity and have caused not only a cessation of the work ordinarily put out by the public, but a stoppage of supplies from those who in the past have lent money on the security of land and buildings, and he instances the insurance companies. Mr. Colls also justly points out that more than half of the works undertaken by builders are not works of necessity but of luxury, and therefore this trade is especially susceptible to any influence which causes a feeling of insecurity and shakes the foundations of credit. Mr. Alexander Rose Stenning struck a similar note in his presidential address at the Surveyors' Institution when he said that the immediate result of the Budget proposals had been "to strike dismay into those engaged in the development of building land. They had preferred to remain idle rather than incur incalculable risks, and the building trade was paralysed." The building trade for some years past have been asking for bread and the Government has given them a stone which is likely to sink their craft. Taxation on development is a novel prescription for the encouragement of development.

Water Charges.

The case of Metropolitan Water Board *v.* Mulholland (noted in the *Builder*, May 1 last), as decided in the County Court, has been carried to the Divisional Court. The Water Board were proceeding against the defendant in respect of water supplied to the hydrants in the King's Theatre, Hammersmith, under an agreement entered into between the defendant and the Board's predecessors, the West Middlesex Water Company. The defendant said that in 1907 notice had been given that the supply in future would be under the Act of 1907, and that under sect. 6 of that Act former agreements were put an end to. The Board contended that this only applied to the ordinary supply to dressing-rooms, etc., which was a separate supply, and the Court have held, affirming the County Court Judge, that the agreement in respect of the fire hydrants was not put an end to but was kept alive by sect. 45 of the Metropolitan Water Board Act, 1902, and sect. 35 of the Act of 1907. The former is a public general statute, but the latter is a local and private Act, which seems a matter which is to be regretted seeing the number of cases that have arisen under it and the difficulty the general public experience in referring to private Acts.

Tunnelling Under a Railway.

The case of the South-Eastern Railway Company *v.* Associated Portland Cement Manufacturers, noted in the *Builder* August 28 last, has been carried to the Court of Appeal. The defendants were assigns of a lease granted by W. M. Calcraft in 1884 of certain lands in Northfleet situated on both sides of the railway, with the right of working the chalk under the land, and by that lease it was provided that the lessees should have the rights and privileges which were possessed by the lessor under an agreement made in 1847 between the plaintiffs, the Railway Company, and W. M. Calcraft's father. That agreement contained the right under certain conditions to tunnel under the railway. The defendants were now seeking to exercise this right, but the Railway Company applied for an injunction to restrain them from making the tunnel under the railway on the ground that the agreement was indefinite, and that it offended against the rule against perpetuities. The Court below gave judgment for the defendants after a prolonged trial, and the Court of Appeal have affirmed this judgment and swept aside the legal technicalities relied upon by the plaintiffs. According to their decision no question arose as to perpetuities or the covenants running with the land, the original party, Calcraft's father, could have sued on the agreement, and the defendants as the assignees of his universal successor were also entitled to the benefit of the covenant as against the Railway Company, who were the original covenantors.

Trade Catalogues.

The Simplon Manufacturing Company, of Carlisle, send us a catalogue of their specialities, comprising various extremely useful instruments, among which are protractor and adjustable set-squares and the "Simplon" patent rapid lining machine, enabling the draughtsman to execute any pitch of shading or section lining by shifting the blade to the required angle to shade cylindrical objects with perfect ease and accuracy, and to perform other work involving much labour when ordinary appliances are used. The Simplon combination drafting machine is an improved type of drawing-board, at the ends of which are machine-cut brass racks, for guiding a transparent celluloid straight-edge, taking the place of the ordinary T-square. The straight-edge can be locked in any position, leaving both hands of the draughtsman free for the manipulation of other instruments at either edge of the transparent blade. An adjustable set-square is included in the equipment of the apparatus, which has been largely taken up by architects in the north of England, and deserves to be more widely known. A neatly-designed and inexpensive form of lettering-square is another noteworthy instrument described in the catalogue.

Messrs. J. Carter, Sons, & Co., of Manchester, send us their catalogue of tools for engineers, blacksmiths, pipe-fitters, and others. Builders and structural engineers will find in this book particulars of numerous tools and lifting tackle useful in the workshop and on the site of works to be executed, and architects should note the complete range of hand-power lifts illustrated in the last few pages. The catalogue has an alphabetical index, which is always convenient to those who keep books of the kind for reference.

BOOKS RECEIVED.

The Baronial and Ecclesiastical Antiquities of Scotland. By R. W. Billings. Part XVIII. (Edinburgh: E. Saunders & Co. 1s.)

London County Council (General Powers) Act, 1909: Part IV.: Amendment of London Building Acts. Pp. 17. (B. T. Batsford. 6d.)

Westminster Abbey. By Francis Bond. Pp. 318. (Henry Frowde. 10s.)

The Lives of the British Architects; from William of Wykeham to Sir W. Chambers. By E. Beresford Chancellor. Pp. 323. (Duckworth & Co. 7s. 6d.)

Bungalow Residences. By Percival T. Harrison, A.M.Inst.C.E. Pp. 76, and 22 plates. (Crosby Lockwood & Son.)

Competition News.

WORKINGTON TECHNICAL SCHOOL.

We are asked by the Secretary of the Royal Institute of British Architects to mention, for the information of architects proposing to take part in this competition, that the Royal Institute of British Architects' Competitions Committee is in communication with the promoters with a view to the amendment of the conditions of this competition.

Correspondence.

"DRY ROT" IN BUILDINGS.

Sir,—Rot, when found in timber, is usually dry and the result of great age.

"Dry rot" is a misnomer, a contradiction in terms; a damp fungus grown in a few hours and destroying the strength of the timber on which it feeds; popularly said to be "the only plant which grows without air"; never known in dry conditions and where a free and constant circulation of fresh air exists.

The two things should never be confounded. One is normal, the other a virulent disease. See an excellent article in "Chambers' Encyclopædia," vol. iv., p. 101. There is another in the "Encyclopædia Britannica," vol. vii., p. 493.

Where "dry rot" is the enemy, fresh air is the victor.

The method of attack rests with the general. If there were no difficulties there would be little use for architects.

E. R. Robson.

Westminster, November 8.

LONDON AND DISTRICT BOROUGH COUNCILS.

Hendon.—The Urban District Council has passed plans as follows:—Messrs. Meredith & Skuse, additions to rink, Rockhall-terrace, Cricklewood; Mr. A. Garstin, extensions to factory, Colindale-avenue; Mr. A. J. Reynolds, four houses, West Heath-drive; Mr. A. Cook, six houses, Nant-road; Mr. E. Streather, fourteen pairs of houses, Powis-gardens, and one pair of houses, Golder's Green-road; Garden Suburb Development Company, three houses, The Meadway; Mr. W. J. King, four houses, Park-avenue, and pair of houses, North End-road. Plans have been lodged as follows:—New Wesleyan church at the Burroughs; Wesleyan chapel, Golder's Green-road; Messrs. Edmondsons, forty-four shops between Hoop-lane and Golder's Green-crescent, Golder's Green-road.

Wimbledon.—Plans have been lodged as follows:—Mr. B. A. Boyton, seven houses and one shop, Laburnham-road; Mr. W. A. Cornell, skating-rink, Wyke-road.

IMPROVED SYSTEM OF VACUUM CLEANING.

Last week we had the opportunity of inspecting an installation of the "Silent Dustman" vacuum cleaning system, recently introduced by Messrs. A. & P. Steven. The apparatus is in operation at Thanet House, Strand, and consists of an exceedingly simple machine fixed in the basement, with pipes extending to the fifth story of the building. So far as external appearance is concerned, the vacuum-producing machine is nothing more than a short piece of iron or steel pipe, with a coupling for the attachment of cold water supply, and a branch pipe for the connexion of an air-suction pipe. Inside, however, there is a device acting like a steam ejector, and to this is connected an interior perforated tube. The machine is made in two types, one for low-pressure and the other for high-pressure water, but the principle of operation is exactly the same for both.

Having laid water on to the inlet, connected a suction pipe to the outlet, and carried a waste-water pipe to the nearest drain, the machine is ready for work. The jet of water from the ejector creates a high vacuum, causing the suction pipe to bring dust from any part of the building with which connexion has been made; the dust and ejected water mingle in the tubular body of the machine, and pass into the drain. So far as the operating part of the apparatus is concerned, there is nothing more to be said in the way of description. The main suction pipe can be carried in any

required direction and through any number of stories, inlets being provided wherever necessary for the attachment of hose pipes furnished with nozzles of different shapes for cleaning floors, furniture, cornices, picture frames, and surfaces of all kinds. The apparatus needs no attention of any kind. To start it, the only thing to do is to turn on the water tap, and it is stopped by closing the tap. When cleaning or dusting has to be done on any floor of a building the cap is removed from the inlet on the suction main, one end of a hose pipe is simply placed in the opening, and the nozzle at the other end is ready for use.

On the occasion of our visit the high vacuum of nearly 28 in. was registered on the fifth floor of Thanet House, with a water consumption which we were informed was about 300 gallons an hour. The machine in question is capable of exhausting from two lines of hose simultaneously, with floor nozzles almost as wide as Bissell carpet-sweepers. The thorough manner in which the apparatus does its work was demonstrated by the complete and instantaneous removal of powdered starch well trodden into an office carpet, and by equally convincing tests conducted in our presence. The system is one which we have every confidence in commending to the attention of our readers.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ACTON.—Workmen's dwellings; Mr. D. J. Ebbett Surveyor to the District Council.

Aintree (Liverpool). — Workshops and engineering sheds, Orrell-park; Messrs. Runton & Barry, architects, Bowlalley-lane, Hull.

Alcester.—School; Messrs. Wilmott, Fowler, & Wilmot, architects, 6, Waterloo-street, Birmingham.

Baldry.—Public school (5,000*l.*); Messrs. Fryers & Penman, architects, Bath-street, Largs.

Barwell.—School (5,000*l.*); Mr. G. Gurney, builder, Leicester.

Bellingham.—Additions to school (1,000*l.*); Mr. Forrest, architect, Moot Hall, Newcastle.

Bradford.—Test-house, Daisy-hill, for the Guardians (7,000*l.*); Mr. F. Holland, architect, Manor-road, Bradford.

Bristol.—Adaptation of premises for school (2,445*l.*); Messrs. R. F. Ridd & Sons, builders, 18. Wilder-street, Bristol.

Brockenhurst.—New school; County Surveyor, The Castle, Winchester.

Chester-le-Street.—Entertainment hall; Mr. R. G. Cowe, architect, Front-street, Chester-le-Street.

Cold Heseldene.—School (3,000*l.*); Mr. J. W. F. Phillipson, architect, Murton-chambers, Grainger-street, Newcastle; Messrs. F. H. Tood & Son, builders, Appleton Wiske, Northallerton.

Colne.—Extensions to Glen Dye Works, for Messrs. Cox & Son, Colne. Twelve houses, Reginald-street; Mr. S. B. Gills, architect, Colne.

Dingle.—Library (3,000*l.*); Clerk to Dingle Urban District Council.

Dorchester.—Adaptation of Stretton Manor as county offices; County Surveyor, Dorchester.

Dudley.—The Town Council has passed the following plans:—Four houses, Rollason-road, for Messrs. Lacey & Powers; new schools, Holly Hall, for the Corporation; alterations to Bull's Head inn, Hall-street, for the trustees of the late Mr. Chillingsworth.

Dunoon.—Boarding-house (3,000*l.*); Mr. T. Baird, architect, 134, Bath-street, Glasgow.

Dunstable. — School; Messrs. Gotch & Sanders, architects, Kettering.

Earlsdon. — Wesleyan church (7,000*l.*); Wesleyan Trustees.

Edinburgh.—Veterinary College (40,000*l.*); Mr. D. McArthy, architect, 25, Frederick-street, Edinburgh.

Exeter.—Boys' school, Cowick-street (2,300*l.*); Mr. P. Morris, architect, 1, Richmond-street, Exeter. Additions to infirmary; Clerk to the Guardians.

Exhall.—Extensions to school; Mr. J. Willmott, architect, 6, Waterloo-street, Birmingham.

Fareham (Hants).—Alterations to asylum (6,000*l.*); County Surveyor, The Castle, Winchester.

Farnworth.—Library, Market-street; Mr. J. Lomax, architect, 11, Fold-street, Bolton.

Fleetwood.—Slaughterhouses (6,000*l.*); Mr. E. Frobisher, Town Hall, Fleetwood.

Frome.—Methodist church (1,200*l.*); Mr. W. S. Skinner, architect, Baldwin-street, Bristol.

Glasgow.—Nurses' home, Belvedere Hospital (3,000*l.*); Mr. A. B. McDonald, City Engineer, Glasgow.

Grassington.—Police-station (1,100*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Grimsby.—School, Strand-street (11,200*l.*); Mr. W. Kirton, builder, Grimsby.

Haddington. — Extension, public school (2,500*l.*); Mr. J. A. Carfrae, architect, 3, Queen-street, Edinburgh.

Hants.—Additions to Crofton and Bishop's Waltham schools; County Surveyor, The Castle, Winchester.

Hartshill.—Extensions to school; Messrs. Wilmott, Fowler, & Wilmot, architects, 6, Waterloo-street, Birmingham.

Heaton.—Co-operative stores (2,000*l.*); Mr. L. G. Ekins, architect, West Blandford-street, Newcastle.

Ilfracombe. — Restaurant on promenade (3,000*l.*); Mr. A. T. Hussell, architect, Market-square, Ilfracombe; Mr. R. Picketts, builder, Ilfracombe.

Keighley.—Additions to workhouse infirmary (2,000*l.*); Messrs. Moore & Crabtree, architects, Keighley. Tool shop and warehouse, Heber-street (1,500*l.*); Messrs. Broster & Son, architects, Keighley. Detached residence (1,000*l.*); Mr. A. P. Harrison, architect, Highfield-lane, Keighley.

Kilbirnie.—School (4,000*l.*); Mr. J. Barbour, architect, 7, Bath-street, Glasgow.

Laufine.—Extensions to Incurables' Home (3,000*l.*); Mr. J. Shanks, architect, 42, Cowgate, Kirkintulloch.

Leeds.—Extensions to Maternity Hospital; The Governors, Leeds.

Liverpool.—Premises for Messrs. Lunt & Co. (3,000*l.*); Messrs. R. Owen & Son, Cross Hall-street, Liverpool; Messrs. Haugh & Pilling, builders, Watnough-street, Liverpool.

Ludlow.—Conversion of mansion into school; Mr. H. Brakespeare, architect, Corsham, Wilts.

Manchester.—Diocesan Church-house, Deansgate; Mr. John Brooke, architect, Exchange-street, Manchester. Additions to premises, for Mr. J. J. Shays, Oxford-street; Mr. J. Gerrard, builder, Swinton, Manchester. Rebuilding Piccadilly branch of Union Bank of Manchester.

March.—Young men's institute; Rev. G. Sherbrooke-Halker, March.

Milford Haven.—Sunday-school (6,100*l.*); Messrs. D. E. Thomas & Sons, architects, Haverfordwest; Mr. H. Adams, builder, Milford Haven.

Moorthorpe.—Police-station (2,000*l.*); Mr. J. V. Edwards, architect, County Hall, Wakefield.

Montrose. — Additions to workhouse; Managers, Montrose Asylums Board.

Northampton.—Extensions to Northampton Town and County School, Billing-road (2,250*l.*); architect, care of Clerk, Northampton Town Council. The Town Council has passed the following plans:—Workshops, etc., The Green, for Mr. S. Underwood; additions to premises, Rose and Crown Inn, Welford-road, for Messrs. P. Phipps & Co., Ltd.; additions to Globe Works, Bridge-street, for Mr. W. Allchin, Ltd.; additions to premises, Watkin-terrace, for the Northampton Guardians; nine houses, and additions to four cottages, Abington-avenue, for Mr. H. Martin.

Paignton.—Vicarage (2,000*l.*); Mr. W. D. Caröe, architect, 8A, Whitehall-place, S.W.

Park Prewett (Hants). — Asylum (1,200 places); Mr. George T. Hine, architect, 35, Parliament-street, Westminster, S.W.

Pensnett.—School, Birds Meadow (3,100*l.*); Mr. J. Hutchings, architect, Stafford.

Plymouth.—The Town Council has passed the following plans:—Extension of premises on site of Chubbs's Hotel, Old Town-street, for Messrs. Spooner & Co., Ltd.; twenty-five houses, Glenparke-avenue, Houndiscombe Estate, for the Houndiscombe Estates Company; arcade, Market-lane, for Messrs. Spencer & Co., Ltd., Mr. A. S. Parker, architect.

Sabden.—School (5,000*l.*); Mr. F. J. Parkinson, architect, 9, Richmond-terrace, Blackburn; Messrs. E. Lewis & Son, builders, Blackburn.

Sheffield.—The Town Council has passed the following plans:—Additions and alterations, Weedon-street, for Messrs. T. Firth & Sons, Ltd.; additions, Horse and Jockey public-house, Attercliffe-road, for Messrs. J. Smith's Tadcaster Brewery Company, Ltd.; additions and alterations, Tramcar Inn, Attercliffe-common and Clay-street, for Messrs. D. Gilmour & Co., Ltd.; four houses, Limpsfield-road, for Mr. George Exley; eight houses, Glenalmond, Blair Athol and Murray roads, for Mr. A. J. Belton; three houses, City-road, for Mr. B. Woodthorpe; four houses, Fraser-road, for Mr. A. Stockton; sanitary convenience and pavilion, Meersbrook Park and Hillsborough Park, also additions to lodge, Firth Park, for Sheffield Corporation; ten houses, Dykes-lane, for Mr. John Heap; sale shops, billiard saloons, and stores, West-street and Charlotte-street, for the Sheffield Motor Company, Ltd.; twelve houses, Middlewood-road, and new roads, for the Don Brick Company, Ltd.; sixteen houses, Wincobank-road, for Mr. G. E. Pye.

Shipton.—Club premises; Mr. A. Kime, architect, Shipton.

Skipton.—Belle Vue Mills (2,000*l.*); Mr. J. Hartley, architect, Skipton. Technical institute (3,000*l.*); Mr. J. Hartley, architect, Skipton; Messrs. S. Foster & Co., builders, Ingrow, Keighley.

Stretford.—Eleven pairs of cottages (3,387*l.*); Mr. Wilson Mellor, builder, 1, Mellor-street, Stretford. The Town Council has passed plans for four houses in Canute-road, for Mr. George H. Brown.

Sutton Coldfield.—Residences; Messrs. Collier & Davey, architects, 71, Colmore-row, Birmingham.

Tividale.—School; Mr. H. Pritchard, architect, Kidderminster.

Turn Shuttleworth.—Weaving mill (3,700*l.*); Mr. J. Garnett, architect, 18, Callender-street, Ramsbottom.

Walsall.—The Town Council has passed plans for a motor spirit store tank in Meadow-street, for the Anglo-American Oil Company, Ltd.; also for six cottages, Sneydo-lane, Bloxwich, for Mr. D. E. Perry.

Wardsley.—School, Lawnswood-road (3,750*l.*); Mr. J. Hutchings, architect, Education Offices, Stafford; Messrs. Gough & Sons, builders, Wolverhampton.

Wednesfield.—School, Lichfield-road; Mr. J. Hutchings, architect, Education Offices, Stafford.

Wembley.—Rink, Harrow-road; Messrs. Rudd & Evans, architects, Wembley. Fifteen houses, Clayton-avenue; Messrs. Robinson & Evershed, architects, Wembley.

METROPOLITAN WATER BOARD.

AT the monthly meeting of the Water Board on Friday last week the following matters were dealt with:—

Hertford Sewage.—The Works Committee reported on the proposed extension of the Hertford Sewage Works. Under the terms of the lease entered into by the late Waterworks Company with the Corporation of Hertford the Board take over all the liabilities and duties of the Corporation in connexion with the works and the purification and disposal of the sewage, and the Corporation pay the Board a yearly sum of 700*l.* For some time past the question of the extension and improvement of the sewage works has engaged serious attention, and the Chief Engineer had prepared a scheme for the construction of the necessary works. It is proposed to discontinue the Manifold Ditch as an effluent outfall, and to substitute a new and improved outfall, which will join the Lee at a lower point where there is an increased current and volume of water. The motive power for the station is proposed to be obtained from the North Metropolitan Electric Power Supply Company, if suitable terms can be arranged. The estimated cost of the scheme will be 24,000*l.*—It was decided to forward plans to the Hertford Corporation and the Local Government Board.

Diversion of Mains.—To allow of the construction of tramways in Malpas and Sherdeloes roads, Brockley, it was agreed to relay the mains, at an estimated cost of 1,000*l.*

New Works.—It was further agreed to provide a 12-in. main from Acton-lane to Gunnesbury-place, Acton, at an estimated cost of 2,760*l.*; and to fix waste meters in Fulham, Ealing, and Acton, at an estimated cost of 1,599*l.*

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Board on Saturday last week the following matters were dealt with.

Sanction for Work.—It was reported that the Local Government Board had given their approval to the plans for the provision of a waiting-room and lavatory accommodation at the Children's Infirmary, additional lavatory accommodation at Leavesden Asylum, and the erection of five closets at White Oak School.

Darenth Asylum.—The Asylums Committee reported having considered a letter of the Local Government Board suggesting the advisability of erecting workshops at the Darenth Asylum. When the matter first came before the Board in February the scheme provided for the accommodation of 239 workers, at an estimated cost of 4,225*l.* Messrs. T. Aldwinckle & Son, the Board's Architects, now submitted amended plans, the estimated cost of the scheme being 3,750*l.* Briefly stated, the plan now submitted provides for one large building, with a floor area of 8,000 sq. ft., lighted from the top on the "factory system" and divided into seven separate workrooms by terra-cotta

partitions. The floor space per worker is 20 ft., and the cubic space 275 ft., the minimum of the Factory Act being 250 ft. The ventilation would be effected by fans, and the air would be changed three times an hour, but the architects pointed out that this would be by no means a large allowance, and have advised that the Plenum system of ventilation should be installed, by which the air would be changed five times an hour instead of three. The extra cost of that system would be 120*l.* Particular attention had been given to the question of ventilation, but the Committee were not prepared to advise the adoption of the Plenum system, as they considered the exhaust system would be must more satisfactory in a building of the kind proposed.—It was decided to forward the plans to the Local Government Board for approval.

COURT OF COMMON COUNCIL.

A MEETING of the Court of Common Council was held at the Guildhall on Thursday last week, the Lord Mayor presiding.

Asphalt Paving.—The Streets Committee submitted an application from Adamant & Asphalte, Ltd., for consent to lay a sample of their patent granited Trinidad asphalt, and recommended that the firm be permitted to lay a specimen of their pavement in the carriageway of Creechurch-lane, free of cost, in accordance with specification and experimental paving conditions, and subject to the right of the Corporation to call upon the Company, at the expiration of two years' free maintenance period, to maintain the said carriageway for five or ten years at 6d. per yard super. per annum. This was agreed to.

The Widening of Fleet-street.—A letter was received from the London County Council relative to the widening of Fleet-street at Nos. 13, 14, 15, 16, 21, 22, 47, 49, 50, 52, 54, 55, 55A, 57, 58, 60, 61, 62, 68, 70, 72, 73, 74, 75, 77, 78, 80, and 81, stating that the Council has agreed to contribute half the net cost of the improvement in accordance with plan, subject to the conditions that if the net cost of the improvement exceeds 400,000*l.*, such contribution shall be limited to 200,000*l.* The Corporation's estimate is 436,238*l.* The letter was referred to the Finance and Improvement Committee.

Alterations, etc., at the Mansion-house.—The General Purposes Committee submitted estimates for works and furniture required at the Mansion-house for the ensuing Mayoralty at a sum of 1,695*l.* 15s. The Committee were authorised to proceed with the works immediately.

The Proposed New Bridge.—The Bridge House Estates, reporting on the question of bridge accommodation, recommended the court to approve:—(*a*) The construction of a new bridge, estimated cost 1,646,983*l.*; and (*b*) The reconstruction of Southwark Bridge to the width of Queen-street-place, estimated cost 261,000*l.*; and that the schemes be referred back to the Committee to proceed therein, reporting to this Court on the details of carrying them into execution; that the Committee be authorised to obtain any necessary professional assistance, and to confer with the London County Council and any other interested authorities, it being understood that the alterations to Southwark Bridge will be proceeded with as soon as Parliamentary powers are obtained. The consideration of the report was adjourned.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

United Westminster Schools.—The Governors of the United Westminster Schools submitted a scheme by which they desire to remove the boarding side of the Emmanuel School, Wandsworth, into the country, and intimated that the Clothworkers' Company had offered to transfer the boarding school administered by them at Sutton Valance, and to contribute 5,000*l.* towards the rebuilding of the premises. Facilities for extending the school are also offered by the Company.—The Committee expressed general acquiescence with the scheme.

Site Purchases.—The following settlements were announced:—8 and 9, Coborn-street, Bow, copyhold, Governors of the Stepney and Bow Foundation, 800*l.*; 11, Amberley-wharves, Paddington, Edale Trustees, 368*l.*

Camden-street, St. Pancras.—An additional vote of 2,300*l.* was recommended for the acquisition of property adjoining the school.

New Greenwich School.—Plans were recommended for acceptance of proposed new school at Russell-place, to be built by the Managers of St. John's.

New Hoxton Schools.—For building an elementary school for 623, a higher mixed school for 390, a school for 160 mentally deficient, and a handicraft centre for forty, together with cookery and laundry centres, and a schoolkeeper's house on the Hoxton site, the tender of Messrs. Johnson & Co., 32,650*l.*, was recommended; architect's estimate, 31,473*l.*

Hammersmith Trade School for Girls.—An estimate of 1,350*l.* was recommended in connexion with the proposed enlargement. It was reported that a brick building would be more economical and satisfactory than iron buildings.

Heating Works. — Tenders accepted:—Brackenbury-road, Hammersmith, Messrs. Tilley Brothers, 162*l.* 9s.; Cottenham-road, Islington, Messrs. Palowkar & Sons, 193*l.*; and Portobello-road, Kensington, Mr. L. Norden, 67*l.*

New Road.—It was reported that negotiations are in progress, in connexion with the Hoxton House site, for the making of a 40-ft. road from Basing-place to Hoxton-street.

Master Builders' Associations, etc.

EDINBURGH BUILDERS AND "GERMAN-MADE" SCHOOLS.

A special joint meeting of the Edinburgh, Leith, and District Building Trades Association and the Building Trades Exchange of the city and district of Edinburgh was held on the 3rd inst. in the Board-room, 61, Lothian-road, Edinburgh, "to consider the policy of the Leith School Board in connexion with the two schools presently being erected for that body." "It appears," continued the circular calling the meeting, "that some time ago they decided to have these schools built on the Doeker principle, and sent the order direct to Germany without asking local, or even British, builders to tender for the work. The whole question is one that affects the Edinburgh and Leith building trade in general, and those members of the trade who are ratepayers in the Burgh of Leith in particular. Over and above, there is a question of principle involved." Mr. W. Graham Yooll, Chairman of the Building Trades Exchange, who presided, expressed the view that the buildings in question were not of a temporary nature, as the foundations, roofs, playgrounds, and all the arrangements seemed to be of a permanent character, and could not possibly be removed without damaging the material. The two schools were to accommodate 480 pupils each. The average cost of a permanent building erected by the local contractors ran from 10*l.* to 12*l.* per pupil, while the buildings in question worked out at nearly 14*l.* per pupil. The School Board, it was said, had gone in for these German buildings because of the rapidity with which they could be erected. Nearly six months had, he said, elapsed since it was known that these schools were to be built, and a commencement had only now been made. He was satisfied that the local contractors could have erected schools as expeditiously as the German contractors. He understood that the supervision of the erections was to be done solely by German overseers.—Mr. David Mekie (Chairman of the Master Builders' Association) thought that the School Board had erred in not keeping before them the great necessity there was for the schools not being of an inflammable nature. But from statements made it seemed that they were of a highly inflammable character. In the course of further discussion, it was pointed out that considerable difficulty had been experienced in getting the plans passed through the Leith Dean of Guild Court. It was also stated that, whereas the ordinary insurance rate for ordinary schools ran to about 1s. 6d. per cent., the rate for those schools would run from 10s. to 15s. per cent. Councillor A. A. Murray, Edinburgh, moved that they protest against the action of the Leith School Board for the reasons already stated, and the resolution was seconded by Mr. J. R. Watson (of Messrs. J. R. & W. Watson, builders, Leith), and unanimously adopted.

Obituary.

MR. WORTHINGTON.

We regret to learn by Thursday's papers of the death, at the age of 84, of Mr. Thomas Worthington, of Manchester. He died at his residence at Alderley Edge on the 9th inst. Mr. Worthington, whose name will be familiar to all our readers, was for many years one of the foremost architects in the north of England, and remarkable both for his artistic and practical acquirements. We shall be able to give some particulars of his life and work in our next issue.

General Building News.

NEW CHURCH, PURLEY, SURREY.

The foundation-stone was recently laid of the new church of St. Mark, Woodcote, Purley. The new church is being built from the designs of Mr. Geo. H. Fellowes Prynne, and will have accommodation for some 700. The builders are Messrs. R. Wilkins & Sons, of Bristol.

CHAPEL REBUILDING, TONYPANDY.

The Bethania Welsh (C.M.) Chapel, Tonypandy, has been rebuilt. The chapel has now accommodation for 810, the gallery being returned on all sides, with space for future organ in return gallery. The vestry adjoining has accommodation for 210 on the ground floor, with minister's retiring-room, stores, and heating-rooms. There are two classrooms and library on the first floor, with landing and two entrances to organ gallery. The builders are Messrs. E. Turner & Sons, of Cardiff, and the architect Mr. R. S. Griffiths, J.P. The contract sum is 4,497*l.*, exclusive of vestry and classroom furniture.

CONGREGATIONAL CHAPEL, PENYDARREN.

The memorial-stones of the new Horeb Congregational Chapel at Penydarren, Merthyr, were recently laid. The church has seating accommodation for about 750, while the schoolroom underneath will hold about 400. Messrs. O. M. Roberts & Sons, Portmadoc, were the architects, the builder being Mr. Watkin Williams, of Cardiff.

BAPTIST CHURCH AND SCHOOLS, SOUTHAMPTON.

These buildings are designed in late Gothic, freely treated. Externally the facings are of red bricks, with Bath stone dressings. The complete scheme embraces church, with lofty tower, seniors' school, intermediates' school, and juniors' school. The latter section of the school is to be omitted for the present. The cost of the portion to be executed at the present time is about 6,000*l.* The architects, whose designs were selected in a recent competition, are Messrs. George Baines & Son, of London.

GRAMMAR SCHOOL, NORTHALLERTON.

New buildings have been opened at the Northallerton Grammar School. The school is practically a one-story building, with present accommodation for 150 mixed scholars, with classrooms, a central hall, and a laboratory. Rooms are provided for the head master and the head mistress, and on the upper floors are studies and common-rooms for the assistant teachers. The school is heated by low-pressure hot water, lighted by electricity. The architect was Mr. W. H. Brierley, of York. Mr. R. T. Snaith, of Darlington, was the general contractor for the building; Messrs. Mackenzie Brothers, of Darlington, carried out the brickwork; Messrs. Dunning & Cooke, of Newcastle, the heating; Mr. T. Lishman, Darlington, the plumbing; Mr. T. B. Robinson, Darlington, the plastering; Mr. T. Metcalfe, Darlington, the painting; and Messrs. Lawson & Stobbart, the electric lighting.

SECONDARY SCHOOL FOR GIRLS, WORCESTER.

The foundation-stone has been laid of a new building for the Worcester City Secondary School for Girls. The building is designed to give accommodation for 200 girls. The major portion of the basement floor is given over to the assembly hall, 53 ft. by 23 ft. On the ground floor are classrooms, mistresses' rooms, etc. The first floor provides accommodation for classrooms, a cookery-room, and a store-room. The corridors, classrooms, cloakrooms, and lavatories will have dadoes of glazed bricks, and the floors and staircase will be of fireproof construction. The building is being erected by Messrs. J. Wood & Sons, Ltd., from the designs of Mr. Alfred G. Parker, City Architect.

SIR WILLIAM BORLASE'S SCHOOL, MARLOW.

Extensions are being made to this school. The additions embrace three rooms, two of them being classrooms, and by a system of movable partitions it will be possible, when required, to provide one large hall. The building is to be heated by hot-water radiators, and lighted by gas. The plans have been prepared by Messrs. Forsyth & Maule, architects, of London, and the contract for the erection of the buildings has been entrusted to Messrs. Y. J. Lovell & Son, builders, of Marlow. The cost of the work is about 1,332*l.*

WESLEYAN SCHOOL BUILDINGS, LLANDUDNO JUNCTION.

The Welsh Wesleyan Methodists at Llandudno Junction have built a new schoolroom vestry and chapel-house. The architect of the new buildings was Mr. Arthur Hewitt, of Llandudno, and the contractor Mr. David Roberts, Llandudno Junction.

EXTENSION OF MARINE SCHOOL, SOUTH SHIELDS.

A new wing has been erected at the South Shields Marine School. The architect for the work was Mr. James Page, and the contractors Messrs. W. J. Robertson & Son.

COUNCIL SCHOOL, SKETTY, GLAMORGAN.

A new Council school has been opened at Sketty. The building provides accommodation for 352 scholars, and consists of seven classrooms and a large marching hall. The boys, girls, and infants have separate cloakrooms, with lavatories, and rooms are provided for the headmaster and teachers. A dining-room has been provided for the use of children that attend school from a distance, and are unable to go to their homes during the midday interval. The building is faced externally with red bricks from the Craig Brickworks, Morriston, with Bath stone dressings, and the roofs are covered with Precelly (Carmarthenshire) slates. Internally the walls have a glazed brick dado, and a space is provided in the classrooms and hall for freearm drawing. The cloakrooms and entrances have floors of granolithic concrete, and the remaining rooms are laid with pitch-pine wood blocks. The internal woodwork is stained green and varnished, and the external woodwork is painted green and white. The heating is by a low-pressure hot-water system installed by Mr. J. E. Hiles, of Hereford, but fireplaces are provided in case of emergency. A complete system of ventilation is provided, fresh air being admitted behind the radiators and by wrought-iron hoppers in the lower parts of the windows, and the vitiated air is removed by means of exhaust roof ventilators. The total cost of the building, including boundary walls and laying out of site, will amount to about 6,350*l*. The contractors were Messrs. Bennett Brothers, Swansea, and Mr. D. Williams acted as clerk of works. The school was designed by and carried out under the directions of Mr. W. James Nash, County Education Architect.

NEW SCHOOL, TAVISTOCK-GROVE.

This school occupies a site of about 1¼ acres at the end of Tavistock-grove. For the foundations it was necessary to go down with pillars of concrete about 12 ft. deep before a proper foundation could be obtained. The building thus rests on stilts, and it is satisfactory to know that no sign of settlement or failure of any kind has revealed itself. The limited site available precluded the usual arrangement of a separate one-story block for infants, and the school is therefore designed for two compartments only—the ground floor for 440 infants and junior mixed in eight classrooms, and the first floor for 428 senior mixed in eight classrooms. A central hall, 59 ft. by 28½ ft., is provided for each department, and by utilising the roof space over the central halls an art-room and a workshop for manual instruction are obtained. The upper floors are fire and sound resisting, formed with a new system of ferro-concrete construction, which avoids the necessity of steel girders. The babies' room is paved with the special jointless flooring called "Doloment," and the floors of halls and remaining classrooms are paved with pitch-pine blocks tongued and grooved together. Glazed brick dadoes are provided in the classrooms, cloakrooms, corridors, and staircases, and in the two halls a tiled dado. The internal joiner's work is in varnished yellow deal. Drinking fountains are provided, four in the school building and two in the playgrounds, of special design, which dispenses with a cup or any drinking vessel. The building is warmed from two steam boilers placed in the basement, and working at 1½-lb. pressure, the radiators being provided with a special arrangement so that the temperature shall not exceed that of hot water, and thus casings can be dispensed with, and the radiators fixd clear of the floors, providing no opportunity for dirt and dust to accumulate. Fresh air is admitted at the back of each radiator, regulated by a valve, the foul air being removed by extraction flues on the opposite side of the rooms. In addition, each classroom is provided with an opening casement on the inner wall, so that cross-ventilation can be obtained from the windows. Electric lighting is installed throughout, also a system of electric bells communicating from the central hall to the classrooms. This work has been executed by Mr. W. D. Willson, of Croydon. The builders are Messrs. Wm. Smith & Sons, of Croydon, whose contract sum amounted to 12,218*l*. Under a separate contract, amounting to 645*l*., the Bennet Furnishing Company, of London, have supplied the furniture, which is executed in Canadian oak. Mr. H. R. Fenn was clerk of works. The architect is Mr. H. Carter Pegg.

BRISTOL FINE ARTS ACADEMY.

A scheme is under consideration for the enlargement and interior reconstruction of the building of the Bristol Fine Arts Academy, from plans made by the late Mr. F. Darc Bryan. It is rather a pity that the building could not be replaced by an entirely new one, for it is a commonplace structure; but Mr. Bryan's designs, to judge from some small illustrations in the *Bristol Times*, seem calculated to produce a good and effective interior, and he has provided a new central entrance and staircase in a one-storied front block projected in front of the existing building, and treated on the roof as an open-air terrace.

CHURCH HALL, MONIFIETH.

A new hall has been opened in High-street, Monifieth, under the auspices of the South U.F. Church congregation. The architects were Messrs. Maclaren, Sons, & Soutar, Dundee, and the contractors as follows:—Mason, Alex. Ramsay, Monifieth; joiner, John B. Hay, Monifieth; plumber, Peter Edmonds, Monifieth; slater, W. S. Wilson, Monifieth; plasterer, John Doig, Forfar; glazier, G. G. Kirk, Dundee; painter, Maver & Winton, Monifieth; heating apparatus, David Keay, Dundee; railing and gates, Alex. Anderson, Monifieth; patent glazing, W. H. Heywood, Huddersfield; seating, Bennet Furnishing Company, Glasgow; tiling, G. H. Nicoll, Dundee; furnishings, T. Justice & Sons, Dundee.

TECHNICAL INSTITUTE, LOUGHBOROUGH.

The Loughborough Technical Institute has been considerably enlarged and improved. The old building has been adapted to form a lecture-room, classroom, and staffroom, the old entrance being retained. The new portion of the buildings, occupying, roughly, three times the area of the old premises, consists, on the ground floor, of chemical and physical laboratories, and two large classrooms divided by a folding partition. There are also cloakrooms and lavatories, porter's room, balance and store rooms. A corridor 10 ft. wide extends the whole length of the building on both floors. On the first floor are a large domestic science room, with scullery, recess, and larder, and in the art department a life-room and three classrooms, two of which are divided by a sliding partition. There are also storerooms and a room with a glass roof for specimen plants. The general contractors were Messrs. T. Barker & Sons, and the architects Messrs. Barrowcliff & Allcock.

PUBLIC HALL, METHLICK, N.B.

A public hall has been built in this village at a cost of 2,000*l*. The building was erected from one of three designs submitted to the trustees by the architect, Mr. James Cobban, Haddo House. The contractors were:—Mason, Messrs. Paterson & Marshall, Udny; carpenters, Messrs. Edwards & Rae, Dyce; slater, Mr. W. S. Ewen, Millbrex; plasterers and tilers, Messrs. J. Bannochie & Sons, Aberdeen; plumbing and heating work, Messrs. J. Laing & Sons, Inverurie; painters, Messrs. George Donald & Sons, Aberdeen; lighting, The Bruce Petrol Air Gas Company, Glasgow; water supply, Messrs. J. Laing & Sons, Inverurie; seating and furnishing, Messrs. James Allan & Co., Aberdeen.

PARISH HALL, REVESBY, LINCS.

A parish hall has been erected in this village. The building was designed by Mr. Allen, of Panton, and the contractors were Messrs. Lettice, of Bolingbroke.

VILLAGE INSTITUTE, BOLTON ABBEY.

A new institute has been presented by the Duke of Devonshire to the inhabitants of this village. The building was designed by Mr. Sherbrooke, of Chesterfield.

READING AND RECREATION ROOMS, BURGHILL, HEREFORD.

New reading and recreation rooms have been erected in the parish of Burghill. The premises have been designed by Mr. Bettington, and the contracts have been executed by Mr. Charles Cook, both of Hereford.

CLUB PREMISES, HALIFAX.

A residence known as Hope Hall, in Clare-road, Halifax, has been converted into premises for the Albany Club. Messrs. Glendinning & Hanson, architects, prepared the plans for the alterations needed, and the various works have been carried out by the following:—Masonry, Messrs. Bower Brothers; joinery, Messrs. Fielding & Bottomley; painting and decorating, Mr. J. H. Ackroyd; furnishings, Messrs. Moss Brothers; ironmongery, Messrs. Thackrah & Sons; and plumbing, Mr. W. Ward.

ENLARGEMENT OF A TEMPERANCE HALL, DUBLIN.

An extension has been made to the Father Mathew Memorial Hall, in Church-street, Dublin. The additions provide for a stage, dressing-rooms, storage-rooms, new gallery exits, lantern and cinematograph operating chamber, and refreshment-room improvements. The building contract was entrusted to Messrs. W. Connolly & Son; the painting and decoration was carried out by Mr. P. J. Duffy; the lighting by the Ampere Electrical Company; and the fibrous plaster work by Mr. J. Ryan, all of Dublin. The work was carried out from designs of Mr. Anthony Scott.

ALMSHOUSES, NOTTINGHAM.

In connexion with the Wilkinson Smith bequest for the provision of almshouses, ten cottages are at present in course of erection on a site adjacent to the Mansfield-road. The cottages occupy an area of nearly an acre. In each house is a parlour 11 ft. by 10 ft., a kitchen 12 ft. by 11 ft., a scullery 8 ft. 3 in. by 6 ft. 6in., a lobby entrance with staircase leading out, two bedrooms, bathroom, coal-house, larder, and lavatory. Mr. Robert Evans, the architect, is responsible for the plans. The cost per cottage (excluding work in connexion with the grounds) is estimated not to exceed 300*l*. Messrs. Henry Vickers & Son are the builders.

SKATING-RINK, WARRINGTON.

A skating-rink has been opened in Winmarleigh-street, Warrington. The new building has a maple floor measuring 155 ft. by 85 ft., and an alley of 118 ft. by 16 ft. for learners. A charming lounge, 70 ft. by 20 ft., with refreshment bar, tearooms, smokeroom, etc., are also provided. The architects were Messrs. Wright, Garnett, & Wright, and the work has been executed by the following:—Builder, Mr. D. Cooper; steel work, Messrs. Forshaw & Sons; heating, Messrs. S. & F. Acton; lighting, Mr. H. Bibby; decorating, Mr. F. J. Dell; and painting, Mr. Winstanley.

CENTRAL LIBRARY, BIRKENHEAD.

The new Carnegie Central Library, Birkenhead, has been completed and opened. The architects were Messrs. Sproat & Warwick. The newsroom will find room for 120 newspapers and periodicals. There is a special magazine-room for ladies. The book accommodation in the lending library is for 60,000 volumes, and indication space is reserved for 40,000 volumes. There is also provided a staff dining-room, and there are also committee-rooms. The reference library has accommodation for 50,000 volumes and tables for fifty-two readers. The children's department is situated in the basement, with a storage for 5,000 volumes.

WESLEYAN HALL, HULL.

The Wesleyans of Hull have erected a new hall on a site in Great Thornton-street. The building, fitted with 1,850 tip-up easy chairs, will provide total accommodation for 2,000 persons. The frontage to Great Thornton-street has been carried out in Ruabon red bricks and Ancaster stone. Internally, the whole of the staircase and corridors are fireproof, the walls being faced with glazed bricks. The premises are lighted by gas and electric light, and they are heated throughout on the low-pressure system. The buildings have been erected by Mr. G. H. Panton, builder, under the supervision of the architects, Messrs. Gelder & Kitchen.

INSTITUTE PREMISES, GARTH, MAESTEG.

A new workmen's hall and institute has been erected by the Garth Colliery workmen. On the ground floor is provided a large hall to accommodate about 500, with retiring-rooms, etc., as well as a large billiard-hall. On the first floor are a reading-room, library, clubroom, etc., and on the top floor rooms for the caretaker. It is built of local stone, faced with red pressed bricks and Grinshill stone dressings. The work has been carried out by Mr. W. Lewis, Maesteg, from plans prepared by and under the superintendence of Mr. W. Beddoe Rees, architect, Cardiff. The building cost 3,000*l*.

WORKHOUSE EXTENSION, GOVAN.

An addition has been made to Govan Combination Parish Poorhouse, Merryflatts. The extension, which has been built at a cost of about 10,000*l*., is a three-story building situated apart from the older portion of the poorhouse. Besides accommodation for about 250 inmates it consists of four day-rooms and a dining-hall. The architects were Messrs. J. Thomson & R. D. Sandilands, and the measurers Messrs. Shearer & Marr, Glasgow.

PUBLIC HALL, NEWCASTLE.

A public hall is being built in Northumberland-road, Newcastle, and is now approaching completion. The principal hall, which will be opened as a skating-rink, will be about 250 ft. in length, by 120 ft. in breadth, and will be made so as to be easily converted into a meeting place for concerts and other large gatherings. There will be seating accommodation for 6,000 people, and a balcony will seat another 1,000. A large café will adjoin the hall, with a balcony, and provision for an orchestra. Altogether the building will be capable of

accommodating some 10,000 people. There will be the usual retiring-rooms, smoking-rooms, and cloakrooms. Messrs. J. Parkinson & Sons, of London, Blackpool, and Newcastle, are the builders, and Mr. J. H. Morton, F.R.I.B.A., of Newcastle and South Shields, is the architect. The front has been carried out by Messrs. S. De Jong & Co., of London.

SAILORS' HOME, SOUTHAMPTON.

A new sailors' home has been built in Oxford-street, Southampton. The work has altogether involved an expenditure of about 10,000*l.* Mr. A. F. Gutteridge, architect, prepared the plans.

ART HALL, EDINBURGH.

An art hall has been erected at the Daniel Stewart's College in Queensferry-road, Edinburgh. The design of the new building was prepared by Mr. Washington Browne, R.S.A., architect, and the cost has been about 2,600*l.*

HALL, CAPUTH, N.B.

A hall is being built on a site on the Hill of Caputh, Glendelvine. The work is being carried out under the supervision of Mr. F. Simpson, architect, Stirling, and executed by the following:—Mason and brick work, Mr. James Ross, Perth; joiners, Messrs. David Kydd & Sons, Spittalfield; slater, Mr. Peter Steel, Dunfermline; plasterer, Mr. James Grant, Alloa; plumber, Messrs. D. & D. Duff, Stirling; heating and lighting, Messrs. Mackenzie & Moncur, Edinburgh; painter, Mr. Hutchison, Alloa; glaziers, Messrs. Walls & Jamieson, Stirling; laying out of grounds and fencing, Messrs. John Buchannan, Spittalfield, and J. D. Allan & Sons, Culthill.

PUBLIC HALL, LUTHRIE.

A public hall has been erected in this village to designs prepared by Mr. David Storrar, architect, Cupar. The building covers a space of about 80 ft. by 25 ft., and will accommodate 300 persons. The mason work was entrusted to Mr. George Pearson, Newburgh. The roof, of English tiles, is by Mr. J. M'Intosh, Cupar, and the woodwork is being erected by Messrs. M'Call & Wishart, Newburgh. The other tradesmen are Mr. F. Batchelor, plasterer, and Messrs. A. Stewart & Son, plumbers, Cupar.

HOSPITAL ADDITION, MILTON, HANTS.

A servants' home is being built at the Portsmouth Municipal Infectious Diseases Hospital at Milton. The plans have been prepared under the direction of the Borough Engineer, Mr. P. Murch, and provide for a two-story block, with accommodation on the ground floor for a dining-room, sitting-room, scullery, bath-room, etc., and on the upper floor for ten bed-rooms, a bathroom, etc. The rooms will be heated with hot water. Mr. Tanner, of Portsmouth, is the contractor, the contract price being 1,785*l.*

NEW BUILDINGS IN UPPER RENFREWSHIRE.

At a recent meeting of the Buildings Committee for the First or Upper District of the County of Renfrew, it was intimated that during the fortnight ending October 25 plans had been lodged for the erecting of the following buildings:—Double villa in Calderwood-road, Newlands, for Messrs. Robert Gilchrist & Son, 50, New-street, E., Glasgow; alterations on property at Rosebank-terrace, Cathcart, for Mr. John F. Adams, Rosebank-terrace, Cathcart; cottage in Glenpatrick-road, Elderslie, for Mr. Peter Roy, Glenpatrick-road, Elderslie; five double cottages in Eaglesham-road, Clarkston, for Mr. James Merry, 116, Smith-street, Govanhill; double villa in Roundhill-drive, Elderslie, for Mr. James Keanie, Dunconnell, Johnstone; alterations and additions to Blackland House, Paisley, for Mr. George Hamilton, Blackland, Paisley; store at Millholm Paper Mills, Cathcart, for Messrs. Wiggins, Teape, & Co., Ltd., Millholm, Cathcart. The valuation of the several linings was 6,170*l.*, as compared with 31,380*l.* for the corresponding period of last year.

NEW BUILDINGS, ABERDEEN.

The Plans Committee of the Aberdeen Town Council has passed the plans of the following new buildings in Aberdeen:—Alterations in connexion with bakery on the east side of Berryden-road, for the Northern Co-operative Company, Ltd., per Messrs. Wilsons & Walker, architects; five dwelling-houses on the west side of Clifton-road, for Mr. Robert Ferrans, joiner; six dwelling-houses on the west side of Clifton-road, for Mr. Alexander Reid, stone-cutter; four dwelling-houses on the west side of Richmondhill-road, for Messrs. Bowie & Manson, builders, per Messrs. W. Henderson & Son, architects; alterations in connexion with premises on the south side of Ashvale-place, for Mr. William Matthew, builder; alterations and additions in connexion with Seabank Rescue Home, King-street, for the Directors, per Messrs. Kelly & Nicol, architects; shed on the south side of Virginia-street, for Mr. George Bisset, engineer.

Stained Glass & Decoration.

WINDOWS FOR LIVERPOOL CATHEDRAL.

On Saturday last we had the pleasure of viewing at the Whitefriars Glass Works portions of the painted windows made by Messrs. James Powell & Sons for the Lady Chapel of Liverpool Cathedral. The sketches and studies, we understand, were made by Mr. J. W. Brown under the supervision of Mr. J. Powell. The chapel contains fourteen windows, three three-light windows in the apse, and eleven two-light windows in the walls on either side of the apse. The chapel looking to the south, it is convenient to describe the position of the windows in this way. The scheme of the windows is that they should serve as a roll of the deeds of good women. The tracery of the apsidal windows contains three phases in the life of Eve—Eve Tempted, Eve in Adoration, and Eve as Mother of Mankind and First Housewife; the three lights of the central window illustrate the adoration of the Magi. From the base of the central light springs a tree, which spreads its branches through all the windows of the chapel, symbolising the root and the life of the Church. The lowest panels of the windows throughout contain the arms of their donors. In the right-hand window of the apse are represented St. Elizabeth, Anna the Prophetess, and Mary of Bethany; in the left-hand window Hannah, Ruth, and Sarah. The subjects of the two-light windows in the left-hand wall are as follows:—The first from the apse contains Queen Bertha of England and Queen Margaret of Scotland; the second, St. Bride of Ireland and St. Non of Wales; the third, St. Helena and St. Hilda; the fourth, St. Bega and St. Werburga (in the lower portions of this window, amongst the branches of the central tree, are represented masons and stonecarvers at work, this window and the next having been given by members of the Morrison family, builders of the Cathedral); the fifth, St. Frideswide and St. Osburga (below, amongst the branches, a bishop is represented receiving plans from the architect). In the right-hand wall the first window from the apse contains St. Margaret of Antioch and St. Etheldreda; the second, St. Agnes and St. Faith; the third, St. Catherine and St. Lucy; the fourth, St. Agatha and St. Prisca; the fifth, St. Perpetua and St. Cecilia; and the sixth, St. Anne and St. Mary Magdalene. The sills of the windows are 23 ft. above the floor level, and the lower panels will be partly veiled by a carved stone screen. The dimensions of the main lights are 24 ft. by 2 ft. 11 in. The windows are admirably designed, their colouring is harmonious and restrained, and will, we think, accord well with their future setting of red sandstone.

Sanitary and Engineering News.

QUAY EXTENSION, HARWICH.

The work of extending the Parkeston Quay is now approaching completion. The extension is 1,004 ft. in length, and, so far as traffic purposes are concerned, has a width of 129 ft. The quay itself is a ferro-concrete structure, standing upon ferro-concrete piles. The work has been constructed to the designs of Mr. John Wilson, M.Inst.C.E., Chief Engineer of the Great Eastern Railway Company, and Mr. A. E. Wilson, Chief Assistant Engineer, the actual form of concrete design adopted being Hennebique's patent. The contractors have been Messrs. A. Jackaman & Sons, of Slough, and who have been represented at Parkeston by their agent, Mr. A. H. Clarke. Messrs. Henley provided throughout all the electric cables, and Messrs. Booth Brothers, of Rodley, were the contractors for the cranes. Mr. John Wilson, the Engineer, has been represented on the works by Mr. A. C. Fellows, as resident engineer. The power-station contains five Davy Paxman's economic boilers, which are fed by Halls' feed-pumps through an economiser. There are three high-speed engines, made by Paxman, controlling the dynamos, and three hydraulic pumping sets, together with, of course, the two turbines already mentioned. The whole of the plant is provided with condensers, the necessary pumps being motor driven. Mr. H. W. Firth has been responsible for the whole of the electrical portion of the undertaking, and he has been represented at Parkeston by Mr. H. Brakes.

PROPOSED DEEP-WATER BERTH, ABERDEEN.

The question of providing a deep-water berth in the tidal harbour for the discharge of large ships that enter the port but cannot pass through the entrance to Victoria Dock at neap tides was recently considered by the Docks and Pilotage Committee of Aberdeen Harbour Board. Mr. R. Gordon Nicol, C.E., Harbour Engineer, recommended a site at Provost Matthew's Quay, estimated to cost 9,200*l.*, but submitted nine alternative plans ranging in cost from 16,760*l.* to 80,400*l.* It was agreed to defer the matter till a report had been obtained as to the estimated cost of discharging vessels by lighters.

SHEFFIELD SEWAGE WORKS.

A section of the scheme for converting the present method of sewage purification at the Sheffield works to the bacteriological process has now been completed. The complete scheme includes the remodelling of the present works, and the construction of the following:—New outfall sewer and main valve-chamber, two new catch-pits and alterations to two existing catch-pits, nine new settling-tanks and the conversion of the existing tank area into eight additional tanks, deepening the two existing sludge wells and remodelling the pumping plant, sixty half-acre contact beds, 16 acres of storm beds, bridge and siphons across the River Don, roads, railways, etc. The estimated cost is 270,369*l.*, exclusive of land and second contact beds (should the latter be required). The total cost of the land will be approximately 86,000*l.* The new works will be capable of dealing with a maximum rate of flow of 64½ million gallons per twenty-four hours. The old works were designed for only 10 million gallons. Twenty-four of the sixty contact beds are now completed in construction, and twelve are filled with clinker ready for working. The sum spent on the extension so far is about 100,000*l.* The scheme was designed by, and has been carried out under the supervision of, Mr. C. F. Wike, the City Engineer. Messrs. Logan & Hemingway are the contractors.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

Messrs. E. H. Shorland & Brother, warming and ventilating engineers, have removed their works from Drake-street, Manchester, to the Manchester Stove Works, Failsworth, Manchester. Their telegraphic address and telephone number are now, respectively, "Shorland, Failsworth" and "No. 319 Failsworth, Manchester."——Messrs. Archibald Smith & Stevens, electric and hydraulic lift manufacturers, of London, have converted their business into a limited company under the title of "Smith, Major, & Stevens, Ltd." The previous owners, Messrs. C. G. Major, E. C. Stevens, and P. H. Stevens, together with Mr. P. C. Major, become directors, with Mr. C. G. Major as chairman.

FRESCO DECORATION IN THE TOWN HALL, LIVERPOOL.

It appears that the Committee for organising the Liverpool pageant of 1907 found themselves left with a balance in hand, and wisely determined to expend it in a permanent piece of artistic decoration which would at the same time serve as a record of the Festival. With this end they commissioned a London artist, Mr. Amschewitz, to paint four frescos in the entrance hall of the Town Hall. These are now completed, and will shortly be placed in position. The subjects are—"Liverpool a Centre of Commerce"; "The Granting by King John of the Charter of Incorporation to Liverpool"; "Industry and Peace"; and "Education and Progress." It appears that a competition was instituted in the first instance among the local artists who had worked on the pageant; it seems a pity that this should have come to nothing, but it is presumed that the results were not found sufficiently satisfactoy.

THE BRITISH FIRE PREVENTION COMMITTEE.

The work of the British Fire Prevention Committee for the session that has just commenced includes the preparation and issue of Reports in respect to a number of doors and roller shutters that have been recently tested by the Committee, and will be embodied in five Reports. Two reports are also in preparation on fire extinguishers, including a petrol extinguisher. Regarding tests to be undertaken in the near future, these include a further concluding series of door tests (mainly relating to composite doors), and the matter of roofing materials will also be shortly having the attention of the Committee.

AN OLD WELL AT RICHMOND.

While setting back a footpath in the middle of the town at Richmond, workmen have unearthed a Tudor spring which is believed to have formed part of the water supply which Henry VII. provided to feed the Old Palace.

In the survey of the palace ordered by Parliament in 1649, it is stated that there were then belonging to Richmond Court two leaden cisterns fed by three pipes of lead, one of which came from a conduit head in Richmond Town Fields called the red conduit. Cusp, an old historian of Richmond, definitely places the site of the red conduit head at the spot where the well has now been found, and the discovery of an old lead pipe projecting into the chamber seems to put the matter beyond doubt. By the chamber, which is being left open for the inspection of experts, is a heavy stone doorway, by the side of which are the remains of a hinge and a bolthole.—*Times.*

OPEN SPACES AND RECREATION-GROUNDS.

The Royal Agricultural Society have sold, at a price of 5,000*l.*, 10 acres of Park Royal, Willesden, to the medical schools of Middlesex and St. Mary's Hospitals as an athletic and recreation ground.—Mr. W. Randall, an alderman of the borough council, has presented to the Hemel Hempstead Town Council 7 acres of land for preservation as a public park.—Under the directions and supervision of Colonel Sexby, Chief Officer of the Parks Department, London County Council, a golf course, nearly three and a half miles in circuit, has been made, at an outlay of some 500*l.*, in an undulating track of what until four or five years ago was arable land of Hainault Forest; the surface altitudes range from 135 ft. to 312 ft., and the hazards are, for the present, formed of the natural soil.

NEW HEATING AND VENTILATING SCHEME AT ST. PAUL'S.

A faculty has now been granted to the Dean and Chapter of St. Paul's Cathedral whereby a portion of a vault in the south-east corner of the churchyard may be used in connexion with the new heating and ventilating scheme of the building. For a long time it has been felt that the existing arrangements were unsatisfactory. The heat has been supplied by a number of old-fashioned stoves burning coke, but the circulation of the warmed air left much to be desired. The Dean and Chapter, therefore, decided a few months ago to instal an entirely new system of heating and ventilation by a combination of hot air and hot water, which is now being introduced under the supervision of Mr. E. J. Harding, the clerk of the works. On the north-west side of the Cathedral, outside the walls, a chamber is being constructed below ground, where the boiler for the hot water and the engine for the hot-air plant will be placed. A similar chamber will be constructed in a portion of the old vault on the south-east side of the Cathedral, for which the faculty already referred to was obtained. In ordinary circumstances the fresh air will be drawn in from the outside, warmed, and then passed into the Cathedral, but when the weather is too cold the inlets will be closed, and the air obtained from the interior of the building. For the distribution of the hot air and hot water a circulating pipe has been run from the outside chambers all round the crypt, by which the air in the latter apartment will be heated to the required temperature. To do this it was found necessary to pierce the wall of the Cathedral below ground, and in doing so Mr. Harding discovered many relics of the old walls, showing that Wren had removed their outer casing of stone, and simply left their core of chalk standing where it was. It was impossible to preserve these ancient fragments, but before their destruction they were photographed and accurately measured. The hot air will pass from the crypt to the interior of the Cathedral through a series of thirty-three gratings in the floor, of which fifteen have been specially constructed for the new system. The hot-water pipes will be carried to a high level in the interior of the building, and made to communicate with a series of radiators fixed on the cornice at the back of the gilded railings. Another series will be placed at the back, on the wall over the nave aisles, for the purpose of preventing a down draught. By the combination of these two currents—a steady current of hot air from the crypt and another current of air warmed by hot water from above—it is hoped to secure an equable temperature of 58 deg. throughout the Cathedral. The new system is expected to be in operation early in the New Year.

DERBY ARCHITECTS' SOCIETY AND THE LOCAL EDUCATION COMMITTEE.

A special meeting of the Derby Education Committee was recently held to consider a question that had been raised in connexion with the plans for the new schools on the Osmaston-road. The Chairman, Dr. Bemrose, explained that the Committee had decided to advertise for plans, but they had received a communication from the Derby Architects' Society pointing out that the form they had decided to advertise in was not in accordance with the rules of the Society. In consequence of this, the Committee came to the conclusion that it would be better not to advertise in the way they had decided upon, but to adopt a different course. If, said the Chairman, they had followed the recommendation of the Architects' Society they, as a Committee, would not make the awards at all. The architects desired that an assessor should be appointed from the Royal Institute of British Architects, and if that were done the Committee would have no say whatever in the matter. This the Committee were not prepared to accede to, and they recommended that the Education Committee rescind a resolution, passed by the Sites and Building Sub-Committee on October 11, and approved by the Education Committee on October 25. This resolution had empowered the Sub-Committee to invite local architects to submit plans for the proposed school in competition. The Sub-Committee further suggested that the Education Committee be recommended to empower the Sites and Building Sub-Committee to appoint an architect to prepare plans for the proposed new school on the Osmaston-road.—Both these suggestions were subsequently agreed to.

QUALIFIED PLUMBERS BY EXAMINATION.

At King's College, London, on the 6th inst., a number of master and operative plumbers attended for practical and theoretical examination for the purpose of registration under the National Registration of Plumbers. The practical examination consisted of tests in lead bossing, also bending and wiping large and small joints as required for good-class domestic sanitary plumbing. In the theoretical examination questions were put to the candidates dealing with subjects of domestic sanitation generally, ventilation, and the connexion of water services to domestic dwellings and public institutions. The examiners appointed by the London Council were Messrs. John Knight, J. Johnson (master plumbers), G. H. Manser and W. Smeaton (operative plumbers). Candidates attended from all parts of London, as well as from several provincial towns, including Loughborough, Slough, Stevenage, and Whetstone. Nine candidates succeeded in passing the examination, and were nominated to the General Council for Registration under the National Registration of Plumbers, and admission to the register.

GLASGOW ARCHITECTURAL CRAFTSMEN'S SOCIETY.

At a meeting of the Glasgow and West of Scotland Technical College Architectural Craftsmen's Society, Mr. James Flett, President, in the chair, Professor Charles Gourlay delivered a lecture entitled "The Building of a House." Beginning by defining building construction as the general sum of all the building crafts controlled as regards design by the master mind of the architect, the Professor proceeded to treat his subject on the basis of this definition. He pointed out how fundamentally necessary it was that the student should study at least one entire building to enable him to appreciate the many varied processes which are involved in the construction of building. To emphasise this view he then showed a series of slides giving complete working drawings for a country house, in which as many different constructional details had been included as possible, while maintaining the unity of the design as a whole. In conclusion, he urged the importance of all architectural craftsmen pursuing a general course of this nature in building construction.

Law Reports.

WITHDRAWING A NOTICE TO TREAT: ACTION AGAINST THE WOOLWICH BOROUGH COUNCIL.

IN the Court of Appeal, before the Master of the Rolls and Lords Justices Moulton and Farwell, on the 8th inst., the case of Wild and others *v.* the Woolwich Borough Council was heard, on the plaintiffs' appeal from a decision of Mr. Justice Eve.

It appeared that the plaintiffs were, as trustees of a will of a testator who died in 1810, entitled to certain house property in Woolwich. Before 1904 the defendants had decided to widen a street called Artillery-place, Woolwich, and for that purpose approached the plaintiffs with a view to acquiring the necessary property, but it was found that the plaintiffs were trustees without a power of sale. On May 10, 1906, notice to treat was served upon the plaintiffs for the purchase of the necessary property required for widening the street. Plaintiffs afterwards abandoned the idea of complying with the notice to treat as it involved the transfer of a part only of the property, leaving a strip which would be useless. Plaintiffs therefore intimated that they would take steps to prevent the defendants from acting upon the notice. Plaintiffs also pointed out that they were merely reversioners subject to leases with many years to run. Defendants stated, on being asked, that they did not intend to serve the tenants with the notice. On October 9, 1907, defendants served the plaintiffs with a fresh notice for the purchase of the whole of the property mentioned in the May notice. To the latter notice the plaintiffs objected, upon the ground that it included property wholly unnecessary for widening the street, and they gave notice that they would apply for an injunction to restrain the defendants from acting upon it unless it was varied. Mr. Justice Eve held that the service of a notice to treat by a local authority under the compulsory powers of Michael Angelo Taylor's Act, in order to acquire property for the purpose of widening a street, did for some purposes create the relationship of vendor and purchaser between the parties, but the landlord must either treat the notice as a contract to purchase the lands as a whole or repudiate it. In other words, he could not accept it in part and repudiate it in part. His lordship accordingly held that there was no ground for saying that the defendants were liable in damages, and dismissed the action with costs. Hence the present appeal of the plaintiffs.

At the conclusion of the arguments of counsel their lordships held that the appellants had entirely failed to make out any claim for compensation, and dismissed the appeal with costs.

Mr. Macmorran, K.C., Mr. Jessel, K.C., and Mr. Quin appeared for the appellants; and Mr. C. A. Russell, K.C., Mr. P. O. Lawrence, K.C., and Mr. Courthorpe-Munroe for the respondent Council.

RIGHT TO MAKE TUNNEL UNDER RAILWAY.

THE case of the South-Eastern Railway Company *v.* Associated Portland Cement Company came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Moulton and Farwell, on the 5th inst., on the appeal of the plaintiff company from a judgment of Mr. Justice Swinfen Eady, in the Chancery Division.

This was an action by the plaintiffs for an injunction to restrain the defendants from making any tunnel, archway, or excavation under their branch line running from London to Gravesend. Defendants were the assignees of a lease granted by a Mr. W. M. Calcraft in 1884 of certain land (through which the plaintiffs' railway ran) at Northfleet, in Kent, with the right of working the chalk under the land. The lease contained a proviso that during the continuance of the term the rights and privileges of the lessor under an agreement made in 1847 between the plaintiffs and Mr. J. H. Calcraft, the lessor's predecessor in title, should be vested in the lessees. By the agreement it was provided that the railway company should make a level crossing, and that Mr. J. H. Calcraft or his assigns should be entitled to make a tunnel or archway under the branch railway, then in contemplation, where it would pass through the land which the railway company required to purchase, provided that the excavation did not interfere with the railway, and that the work was done under the direction of and to the satisfaction of the railway company's engineer. The conveyance of the land required by the railway company was dated in December, 1847, and by it the right to make the tunnel was excepted, and reserved to J. H. Calcraft, his heirs, appointees, and assigns. Mr. J. H. Calcraft died in 1880, and under his will Mr. W. M. Calcraft became owner of the land through which the railway had been made, and part of it formed the subject of the lease of 1884. Defendants having worked out the chalk to the north of the railway, proposed to make a tunnel in accordance with the right reserved, but the railway company objected, and brought the present action to restrain them doing so. Mr. Justice Swinfen Eady held that the defendants had a legal right to make the tunnel, and dismissed the action with costs. Hence the present appeal of the railway company.

Mr. Micklem, K.C., and Mr. P. F. Wheeler appeared for the appellants; and Mr. Macnaghten, K.C., and Mr. MacSwinney for the respondents.

Their lordships, without calling upon counsel for the respondents, held that the decision of the learned judge was perfectly right, and dismissed the appeal with costs.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xv.; Auction Sales, xxiv.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

* NOVEMBER 19.—**Yorkshire.**—SECONDARY SCHOOL.—The North Riding of Yorkshire C.C. invite designs of a proposed secondary school for girls. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Bury.**—LAYING-OUT GARDEN CITY SUBURB.—The Bury Housing and Town-Planning Association offer three prizes for a design for laying-out a garden city suburb. For further particulars see advertisement in our issue of October 30.

NOVEMBER 30.—**Herne Bay.**—PAVILION ON PIER.—The Herne Bay U.D.C. invite designs for pavilion on pier. Two premiums are offered. For further particulars see advertisement in our issue of August 28.

NOVEMBER 30. — **Workington.** — SCHOOL. — The Cumberland Education Committee invite sketch plans, etc., for a Technical and Secondary School at Workington, Cumberland. For further particulars see advertisement in our issue of October 30.

DECEMBER 1.—**Bangor.**—LAYING-OUT A PARK.—The U.D.C. of Bangor (Co. Down) invite a scheme for the laying-out of a public park, 20 acres in extent, on ground acquired by them within their District. A premium of 30*l.*, to include all expenses, will be paid to the person whose scheme may be selected. Mr. J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.

DECEMBER 1. — **Tralee.** — PROPOSED CARNEGIE LIBRARY AND TECHNICAL SCHOOL.—The U.D.C. propose erecting this building, at a cost not exceeding 4,500*l.*, and invite competitive designs for same, according to "Instructions and Conditions," copies of which may be had by intending competitors on application to the Town Clerk, Tralee. Prizes of 20*l.* and 10*l.* to be awarded to the designs placed first and second by the assessor.

* DECEMBER 17.—**London.**—DESIGN FOR A FAÇADE.—The proprietors of the *Builder* offer a first prize of 20 guineas and a second prize of 10 guineas for the two best designs for a suggested new façade to the Institute of Architects' House. See October 2 and 23; also advertisement in this issue for further particulars.

DECEMBER 18. — **Headingley, Leeds.** — TRAINING COLLEGE.—Leeds Education Committee invite architects practising in Leeds to submit competitive designs for proposed training college for teachers, Kirkstall Grange, Far Headingley, Leeds. Sir Aston Webb, C.B., R.A., F.R.I.B.A., has been appointed to assist and advise the Committee in deciding the competition. On the payment of a deposit of 2*l.* 2s. each competing architect may obtain a copy of the conditions of competition, etc. Mr. James Graham, Secretary for Education, Education Department, Leeds.

JANUARY 31. — **Cardiff.** — NATIONAL MUSEUM.—The Council invite competitive designs for the erection of a new National Museum at Cardiff. Premiums of 200*l.*, 150*l.*, and 100*l.* for second, third, and fourth places. Particulars on receipt of a deposit of 2*l.* 2s. from Dr. Wm. Evans Hoyle, Director of the Museums, City Hall, Cardiff. For further particulars see advertisement in our issue of August 28.

FEBRUARY 1. — **Oldham.** — PROPOSED EXTENSION OF THE TOWN HALL.—The T.C. invite competitive designs for a proposed extension of the existing Town Hall from architects practising or residing within the Borough. A plan of the site, together with instructions and suggestions for the guidance of architects, may be obtained on application to Mr. E. C. Foote, the Borough Surveyor, on payment of 1*l.* 1s. Premiums of 50*l.*, 30*l.*, and 20*l.* respectively will be awarded to the authors of the designs which are selected as first, second, and third in order of merit, and a sum of 5*l.* will be paid to all unsuccessful competitors who send in a complete set of plans in accordance with the instructions.

* MARCH 1—GLAZED BRICKWORK.—A committee of glazed brick manufacturers invite designs for works to be executed in glazed brickwork, and also essays on same. Three prizes are offered. See advertisement in this issue for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 15. — **Blyth.** — SCHOOL.—Blyth U.D.C. Education Committee invite tenders for the erection of proposed new schools near Morpeth-road, Blyth. The plans, etc., can be seen at the Education Offices, Bridge-street, Blyth. Bills of quantities, etc., can be had on payment of a deposit of 2*l.* 2s.

NOVEMBER 15.—**Medomsley.**—HALL.—For new hall and other alterations at Medomsley branch, for the Annfield Plain Industrial Co-operative Society, Ltd. Drawings, etc., may be seen, and forms of tender obtained, at the office of Mr. Geo. Thos. Wilson, architect, 22, Durham-road, Blackhill.

NOVEMBER 15. — **Skelmanthorpe.** — LODGE, ETC.—Erection of a lodge and entrance gates, Commercial-road, Skelmanthorpe. Plans may be seen, and bills of quantities obtained at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield.

NOVEMBER 16.—**Barnby Moor.**—HOUSE.—Erection of a new house at Barnby Moor, near Retford, for Mr. J. Spencer. Names to Mr. G. A. Wilson, architect, Hartshead-chambers, Sheffield.

NOVEMBER 16. — **Strabane (Ireland).** — IMPROVEMENTS.—For certain improvements to the Workhouse Infirmary, for the Guardians, in accordance with plans, etc., which may be seen at the Clerk's Office.

NOVEMBER 17. — **Barrow-in-Furness.** — ALTERATIONS. — Builder's, joiner's, plumber's, and other work required in certain alterations to the store-rooms, adjoining the receiving wards, at the Workhouse, Roose. Plans, etc., may be inspected, and bills of quantities obtained, at the office of the architect, Mr. H. T. Fowler, A.R.I.B.A., Cornwallis-street.

NOVEMBER 17. — **Fermoy.**—LABOURERS' DWELLINGS.—The Fermoy U.D.C. invite tenders for the erection of six labourers' dwellings at Wolfe Tone Park, Fermoy, together with the construction of foot-paths, fences, etc., also the laying of sewerage and water supply. Plans, etc., prepared by Mr. D. J. Buckley, C.E., M.R.I.A.I., Cork, may be examined and copied at the office of the Urban Council or of the architect. Forms of tender may be obtained from the Clerk or the Engineer. A deposit of 20*l.* must accompany each tender.

NOVEMBER 17. — **Lanchester.** — CONVERTING.—For the conversion of lodging-house at Lanchester into two houses, for the Guardians. Drawings, etc., may be seen, and forms of tender may be obtained, at the office of Mr. G. T. Wilson, architect, 22, Durham-road, Blackhill.

NOVEMBER 17.—**Winchester.**—SHOPS.—Erection of three shops in Jewry-street, Winchester, for the Winchester Corn Exchange Company. Plans, etc., may be seen, and quantities obtained, at the offices of Mr. J. Ashton Sawyer, Chartered Surveyor, 59, High-street, Winchester.

NOVEMBER 18. — **Hull.** — SCHOOL.—The Education Committee invite tenders for the erection of a school in Sidmouth-street. Drawings, etc., may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull, and quantities obtained, upon a deposit of 2*l.* 2s. Remittances to be made payable to the City Treasurer.

NOVEMBER 18.—**Leeds.**—DIVISIONAL POLICE-STATION, MILLGARTH-STREET.—The Watch Committee invite tenders for the whole or any portion of the work required in connexion with additions and alterations to the above-named building. Plans, etc., may be seen, and bills of quantities, etc., obtained, at the offices of the architect, Mr. Archibald Neill, F.R.I.B.A., 38, Park-row. A deposit of 1*l.* 1s. will be required.

NOVEMBER 18. — **Loughborough.**—ALTERATIONS.—For alterations at the Hickling's School, Ashby-road, for the Education Committee. Plans may be seen, and schedule of quantities obtained, at the offices of Messrs. Barrowcliff & Allcock, architects, Town Hall-chambers, upon deposit of 1*l.* 1s.

* NOVEMBER 18. — **Romford.**—BOILER-HOUSE, ETC.—The Guardians of the Romford Union invite tenders for new boiler-house and Lancashire boiler with Galloway tubes at Workhouse, Romford. See advertisement in this issue for further particulars.

NOVEMBER 19. — **Heywood.**—HOUSES.—Erection of twenty houses in Mount-street and Newbold-street, Heywood. Plans, etc., may be seen, and quantities obtained, at offices of Messrs. Sutcliffe & Sutcliffe, architects, Todmorden.

NOVEMBER 19. — **Newbury.** — COTTAGES.—Tenders are invited from builders in business within seven miles of Newbury Bridge for the erection of ten cottages for the Newbury T.C. Plans, etc., may be seen at office of Mr. S. J. L. Vincent, A.M.Inst.C.E., Borough Surveyor.

NOVEMBER 20.—**Dores.**—ALTERATIONS, ETC.—Mason, carpenter, slater, plumber, plasterer, and painter works of additions, alterations, and improvements to be made to the Manse and Church of Dores; also for several hundred yards of tile drains in glebe. Plans, etc., with Mr. Thos. Munro, architect, 62, Academy-street, Inverness.

NOVEMBER 20. — **Plymouth.**—STABLING.—Erection of stabling for about thirty horses in Plymouth. Plans and specifications can be inspected on application to Messrs. Truscott & Sons, Octagon-mews, Plymouth.

* NOVEMBER 20.—**Sussex.**—SCHOOLS, ETC.—The East Sussex Education Committee invite tenders for (1) new school, etc., at Willingdon; (2) new school, etc., at Heathfield; (3) alterations to school at Newhaven. See advertisement in this issue for further particulars.

NOVEMBER 20.—**Workington.**—EXTENSION OF METER HOUSE.—For extension of the meter house at the Stainburn Reservoir, for the Corporation. Plans, etc., may be seen at the office of Mr. H. B. Williams, Borough Engineer and Surveyor, Town Hall, Workington.

NOVEMBER 22.—**Abertillery.**—SWIMMING BATH.—The construction of a large swimming bath, boiler-house, and other buildings for the Committee of the Powell's Tillery Workmen's Institute, Abertillery. Plans may be seen with the Secretary, Mr. C. W. Spalding, Powell's Tillery Institute, Abertillery, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff, where bills of quantities may be obtained.

NOVEMBER 22.—**Capel Bangor.**—REROOFING.—For reroofing and making alterations to Capel Bangor Church, near Aberystwyth. Plans, etc., may be obtained on application to Mr. G. T. Bassett, A.R.I.B.A., architect and surveyor, Aberystwyth.

NOVEMBER 22. — **Manchester.** — ADDITIONS.—The Paving, etc., Committee invite tenders for alterations and additions to messrooms, sheds, etc., at the Pond-street Highways Yard. Drawings may be seen, and specification, etc., obtained, at the office of the City Architect, Town Hall, upon payment of 1*l.* 1s. All cheques or postal orders are to be made payable to the order of the Corporation of Manchester.

NOVEMBER 22. — **Stanley, Co. Durham.** — NEW COUNCIL OFFICES, ETC.—The Stanley U.D.C. invite tenders for the erection of new offices in Front-street, Stanley. Bills of quantities, etc., may be obtained from, and plans and specifications seen at, the office of Mr. John Geo. Ridley, Clerk to the Council, Stanley, R.S.O., Co. Durham, or the architect for the work (Mr. John W. Wilson, No. 3, Coleshill-street, Sutton Coldfield, Warwicks.), on payment of the sum of 2*l.* 2s.

NOVEMBER 22. — **Wick.** — MANSE.—The Deacons' Court invite tenders for the respective trades for proposed U.F. Manse at Wick. Copies of schedules, etc., on application to Mr. Wm. Sutherland, Ashley House, Wick. The drawings may also be seen there.

NOVEMBER 23-DECEMBER 1.—**Pontypridd.**—IRON BUILDINGS.—Pontypridd Guardians invite designs and tenders for the erection of iron buildings on a site in Court House-street, Pontypridd. A block plan of the site and of the size of the suggested buildings may be seen at office of Mr. Wm. Spickett, Clerk, Union Offices, Pontypridd.

NOVEMBER 24.—**Inverness.**—MASON AND CARPENTER WORK, TRAMWAY SCHEME.—Inverness T.C. invite tenders for mason and carpenter work. Plans may be seen, and specification, etc., obtained, at the office of the Burgh Surveyor.

NOVEMBER 24. — **Sevenoaks.** — BATHROOMS, ETC.—The Guardians invite tenders for constructing bath-rooms and extra water-closets at the Union Workhouse, situated at Ide Hill, Sundridge, near Sevenoaks. Plans, etc., can be seen, and forms of tender obtained, at the office of the architect, Mr. Ernest Pawley, 86, High-street, Sevenoaks.

NOVEMBER 25.—**Moy.**—ADDITIONS TO HOTEL.—Additions to Maghery Hotel, Moy, Co. Tyrone, for Mrs. Corr, proprietress. Plans, etc., can be obtained at office of Mr. Charles Macalister, architect, White-hall-buildings, Belfast, or from Mrs. Corr.

NOVEMBER 25. — **Rainhill.** — COTTAGES.—The Committee of Visitors of Lancashire Asylums Board, County Asylum, Rainhill, invite tenders for the erection of six cottages at this Asylum. The drawings may be inspected, and all information obtained, at the Engineer's office. Bills of quantities can be obtained on application to Mr. Jas. Gornall, Clerk and Steward, Clerk's office, Rainhill Asylum, on payment of 2*l.* 2s. (in cash) deposit.

NOVEMBER 26.—**Prestwich.**—SCHOOL.—The Lancashire Education Committee invite tenders for the erection of a new elementary school at Prestwich, near Manchester, to accommodate 548 scholars. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

NOVEMBER 29.—**Royal Leamington Spa.**—GREENHOUSE.—The T.C. invite tenders for (1) the excavation, concrete, and brickwork required for the erection of a greenhouse, 100 ft. by 12 ft.; and (2) the joiners', glaziers', and painters' work needed for the completion of the same. Drawings, etc., may be seen at the office of the Borough Engineer at the Town Hall.

* NOVEMBER 29.—**Winchmore Hill.**—WARD BLOCK, ETC.—The Enfield and Edmonton Joint Hospital Board invite tenders for erection of an additional ward block, an isolation block, and extensions to administration block at the Isolation Hospital, World's End. See advertisement in this issue for further particulars.

NOVEMBER 30. — **Erdington.** — LAVATORIES, ETC.—Erdington U.D.C. Highways and Buildings, Tramways and Parks Committees invite tenders for the erection of the following buildings, viz.:—Public lavatories, Orphanage-road; public lavatories, Woodend-road; tramways waiting-rooms and lavatories at Chester-road; open-air swimming baths, boathouse, landing stage, etc., small bridge

BUILDING—*continued.*

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spanning stream, and shelters, at the new Reservoir Park. Drawings, etc., may be seen, and copies of bills of quantities, etc., obtained, upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, the Council House, Erdington. Contractors will be required to deposit a sum of 5*l.* with the Council's Accountant Clerk.

DECEMBER 1.—**Edinburgh.**—GALLERIES.—The Commissioners of H.M. Works and Public Buildings invite tenders for the structural work, Royal Scottish Academy (new galleries). Drawings, etc., may be seen on application to the Principal Architect, H.M. Office of Works, Parliament-square, Edinburgh. Bills of quantities and forms of tender may be obtained at the same address on payment of 1*l.* 1s.

DECEMBER 4.—**Galway.**—SCHOOL.—Building and furnishing a new national school, according to the plans and specifications of the Board of Works. Plans, etc., may be seen at the office of Mr. Tighe, Board of Works Engineer, Galway, or at the Parochial House, Kiltulla, Athenry.

DECEMBER 6.—**Kirkburton.**—DRYING HORSES.—The Storthes Hall Asylum Sub-committee invite tenders for installing twenty-seven additional drying horses in the laundry at the Storthes Hall Asylum, Kirkburton, near Huddersfield. Specifications, etc., can be obtained on application to the West Riding Architect, County Hall, Wakefield. A deposit of 1*l.* must be sent by separate letter to the West Riding Treasurer, County Hall, Wakefield.

✱ DECEMBER 6.—**Salford.**—ANNEXE EXTENSION.—The Salford Corporation invite tenders for a new annexe extension and sundry alterations to Town Hall and Health Offices in Bexley-square, Salford. See advertisement in this issue for further particulars.

✱ NO DATE.—**Mill Hill.**—VILLAS.—Tenders are invited for the erection of two pairs of villas at Mill Hill. See advertisement in this issue for further particulars.

NO DATE.—**Swinnow, Bramley.**—HOUSES AND SHOPS.—Tenders (all or any trades) for building houses and shops at Swinnow, Bramley. Quantities furnished. Apply Patchett, architect, 65, Highfield-road, Bramley.

ENGINEERING, IRON, AND STEEL.

NOVEMBER 15.—**Flexford.**—BRIDGE.—The R.D.C. of Lymington invite tenders for the building of a ferro-concrete bridge over the stream at Flexford, between the Parishes of Sway and Hordle. Particulars to be obtained of Mr. S. Crittall, Surveyor, Sway.

NOVEMBER 16.—**London.**—CROSSINGS, ETC.—The Secretary of State for India in Council invites tenders for crossings and switches. The conditions of contract may be obtained on application to the Director-General of Stores, India Office, Whitehall, S.W.

NOVEMBER 17.—**Eccles.**—HEATING APPARATUS.—The Corporation invite tenders for the supply and fixing of the heating apparatus required at Beech-street Council School, now in course of erection. Drawings may be inspected, and further particulars obtained, at the office of the architect, Mr. Henry Lord, 42, Deansgate, Manchester, and a copy of the conditions, etc., may be obtained from Mr. Edwin Parker, Town Clerk, Town Hall, Eccles, on payment of 10s.

NOVEMBER 19.—**Manchester.**—RISING MAIN.—Manchester Corporation Electricity Committee invite tenders for laying a 10-in. diameter rising main from the pumping station at Clayton Vale to the Stuart-street generating station. Forms of tender, etc., may be obtained on application to Mr. F. E. Hughes, Secretary, Electricity Department, Town Hall, Manchester, on payment of a fee of 2*l.* 2s. Drawings, etc., may be inspected at the offices of the engineers, Messrs. C. S. Allott & Son, 46, Brown-street, Manchester.

NOVEMBER 19.—**Warwick.**—SINKING A WELL.—Sinking and lining a borehole about 800 ft. in depth, together with test pumping and other works. Specifications, etc., may be obtained from Mr. J. C. Melliss, M.Inst.C.E., civil engineer, 264, Gresham House, London, E.C., upon the payment of 1*l.* 1s.

NOVEMBER 20.—**Birmingham.**—TELEPHONE INSTALLATION.—The Guardians invite tenders for the maintenance of their private telephone installation at the Birmingham Workhouse, Dudley-road, for a period of twelve months. Further information can be obtained on application to the Master of the Workhouse, Dudley-road.

NOVEMBER 23.—**Edinburgh.**—ELECTRICAL INSTALLATION.—Edinburgh Corporation invite tenders for the electrical installation at M'Leod-street Police-station. The specification, etc., can be obtained at the office of Mr. Frank A. Newington, Engineer, Electricity Supply Station, Dewar-place, Edinburgh, on payment of a deposit of 1*l.* 1s.

NOVEMBER 23.—**Leeds.**—ELECTRIC LIGHTING.—Installing and lighting throughout the Kingston Unity Friendly Society's Hall, Union-street, Leeds, with electric fans in various parts. Mr. A. Wright, Secretary, Property Committee, K.U. Hall, Leeds.

NOVEMBER 23.—**London.**—GIRDERS.—Great Western Railway Directors invite tenders for the supply of about 200 tons of steel bridge girders and other iron and steel work of British manufacture. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer, Paddington Station, London.

✱ NOVEMBER 23.—**London, W.**—IRON STAIRCASE.—The Guardians of Paddington invite tenders for iron fire-escape staircase at their Workhouse, Harrow-road, W. See advertisement in this issue for further particulars.

✱ NOVEMBER 23.—**Plymouth.**—SHELTERS.—The Corporation of Plymouth invite designs and tenders for supply, delivery, and fixing of No. 4 ornamental shelters in the Pleasure-grounds. See advertisement in this issue for further particulars.

NOVEMBER 24.—**Inverness.**—TRAMWAY SCHEME.—The Inverness T.C. invite tenders for the supplying and laying of about 1,667 yds. of permanent way. Plans may be seen, and specification, etc., obtained, at the office of Mr. T. H. Scott, C.E., Burgh Surveyor, on payment of the sum of 1*l.* 1s.

NOVEMBER 24.—**Lenham.**—HEATING.—Kent Education Committee invite tenders for the improvement of the heating apparatus required to be carried out at Lenham Council School. Specifications can be seen, and further information obtained, at the offices of the Correspondent, Mr. F. Day, Lenham.

DECEMBER 1.—**North Dublin.**—ELECTRIC LIGHTING.—The North Dublin Board of Guardians invite tenders for the wiring and fittings for electric lighting of the Workhouse buildings, nursing sisters' residence, and North City dispensaries. Plans, etc., may be inspected at the office, North Brunswick-street, Dublin, by appointment, or copies of either may be obtained from the consulting engineer, Mr. Louis J. Lawless, A.I.E.E., 27, Castlewood-avenue, Rathmines, on payment of the cost of production.

✱ DECEMBER 1.—**Pontypridd.**—IRON BUILDINGS.—The Guardians of the Pontypridd Union invite designs and tenders for erection of iron buildings on a site in Court House-street, Pontypridd. See advertisement in this issue for further particulars.

NO DATE.—**Glynneath.**—DRIFTS.—Tenders are invited for driving a pair of across measures drifts, dipping 10 in. per yard. Length of drifts, 350-400 yds. Further particulars on application to the Abergwm Estate and Collieries Office, Glynneath.

NO DATE.—**Kippax.**—VENTILATION.—Ventilation of an infants' classroom at the Kippax Provided School. Specification and quantities will be supplied on application. Mr. Robert J. Smith, Education Offices, Garforth, near Leeds.

NO DATE.—**Llanarth Council School.**—HEATING.—Estimates are invited for the installation of a low-pressure hot-water heating apparatus at the school. Plan, etc., can be seen at the office of Mr. G. Dickens-Lewis, County Architect.

MISCELLANEOUS.

NOVEMBER 15.—**Finchley.**—IRON FENCING.—The Finchley U.D.C. invite tenders for the supply, delivery, and erection in the Regent's Park-road of about 780 yds. run of 4 ft. 6 in. unclimbable wrought-iron fencing. Drawing, etc., may be seen, and form of tender obtained, on application to the Council's Engineer and Surveyor, Council Offices, Church End, Finchley, N.

NOVEMBER 17.—**Oldham.**—BOWLING GREEN.—Oldham Parks Committee invite tenders for the construction of bowling green at Alexandra Park. Particulars may be obtained at Borough Surveyors' Office.

NOVEMBER 20.—**Bridgend.**—FIRE-EXTINGUISHING APPARATUS.—For fire-extinguishing apparatus at the Workhouse Infirmary, for the Guardians of Bridgend and Cowbridge Union. Plan, etc., may be seen, and particulars obtained at office of Mr. P. J. Thomas, architect, Bridgend.

NOVEMBER 24.—**Wakefield.**—DESKS.—The West Riding Education Committee invite tenders for the supply of dual desks for infants for a period of twelve months. Full particulars may be obtained on application to Mr. J. W. Horne, Education Department (Elementary Branch), County Hall, Wakefield.

NOVEMBER 26.—**Erdington.**—FENCING, ETC.—Erdington U.D.C. Parks and Allotments Committees invite tenders for the provision and erection of unclimbable wrought-iron fencing and gates at the Goosemoor-lane Allotments and the New Reservoir-park. Copies of specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, Council House, Erdington.

DECEMBER 1.—**West Hartlepool.**—SCAVENGING, SEATON CAREW DISTRICT.—The Corporation invite tenders for the supply of good horses and carts, with suitable drivers, for the collection and disposal of the whole of the house refuse from the Seaton Carew District. Specification can be seen, and form of tender obtained, upon application at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

DECEMBER 4.—**Winterton.**—SCAVENGING.—Winterton U.D.C. invite tenders for the weekly scavenging of 230 pan closets in the above district for a period of one year. Mr. W. Holgate Cross, Clerk, Winterton.

NO DATE.—**Hessle.**—HAULAGE.—Tender wanted, haulage 200,000 bricks, Hessle to Bridlington.—Eckles, North Bridge, Hull.

NO DATE.—**Leeds.**—HAULAGE.—Price wanted for hauling 600 tons bricks. Address E 165, the *Yorkshire Post*, Leeds.

NO DATE.—**Roydon.**—GUTTERING, ETC.—Repairs, fix guttering pipes, etc., to Roydon Town Houses. Full particulars can be obtained from Mr. H. Twaite; or Overseers, Roydon P.C., Roydon, King's Lynn.

NO DATE.—**Wallsend.**—CARRYING DUST.—Carrying 200 tons of flue dust out to sea. For particulars apply by letter to the Newcastle-upon-Tyne Electric Supply Company, Ltd., Carville Power Station, Wallsend.

PAINTING, etc.

NOVEMBER 17.—**Manchester.**—PAINTING.—The Guardians of the Poor of the Township of Manchester invite tenders for painting, etc., at their offices in New Bridge-street, Manchester. Specifications may be obtained at the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, upon payment of a deposit of 10s. 6d.

NOVEMBER 18.—**West Derby.**—POINTING, ETC., MILL-ROAD INFIRMARY.—The Guardians invite tenders for pointing, etc., the buildings of the Administrative Block and the Nurses' Home at the Infirmary. Specification may be seen at the office of the Steward, on the premises.

NOVEMBER 23.—**Leeds.**—PAINTING.—Painting the interior and exterior of the Public Baths at Union-street, Holbeck, and Kirkstall-road. The specification may be seen, and forms of tender obtained, at office of Mr. W. T. Lancashire, City Engineer, Municipal Buildings.

✱ NOVEMBER 30.—**Leyton.**—CLEANING, PAINTING, REPAIRS, ETC.—The Leyton U.D.C. invite tenders for cleansing, painting, and repairs at two schools and other works to be executed during the Christmas vacation. See advertisement in this issue for further particulars.

ROADS, SANITARY, AND WATER WORKS.

✱ NOVEMBER 15.—**Beckenham.**—MAKING-UP STREETS.—The Beckenham U.D.C. invite tenders for making up various private streets in their district. See advertisement in this issue for further particulars.

NOVEMBER 15.—**Blackburn.**—STREET WORKS.—The Highway Committee invite tenders for excavating, forming, and paving streets. Plans, etc., may be seen, and all information obtained, on application at office of Mr. William Stubbs, A.M.Inst.C.E., Borough and Water Engineer, Municipal Offices, Blackburn.

NOVEMBER 15.—**Fulbourn Asylum, Cambridge.**—DRAINAGE.—Tenders are invited by the Committee for new drainage scheme. Bills of quantities, etc., may be obtained from the architect, Mr. A. P. MacAlister, F.R.I.B.A., 20, St. Andrew's-street, Cambridge, on payment of a deposit of 1*l.* 1s.

NOVEMBER 15.—**Leeds.**—PAVING, ETC.—Leeds Highways Committee invite tenders for paving and flagging of private streets. Drawings may be seen at the City Engineer's Office, Municipal Buildings. Forms of tender, etc., may be obtained, and copies of the documents forming the contract inspected, on application at the Highways Office, 155, Kirkstall-road, Leeds.

NOVEMBER 15.—**Logierieve.**—WATER SUPPLY.—Estimates are wanted for the carrying out of the work in connexion with a new water supply at Logierieve (Gordon's College Lands: Estate of Orchardtown). Mr. Thos. Fotheringham, Factor, Office, Gordon's College.

NOVEMBER 15.—**Northwich.**—PAVING.—The plans, etc., lie at the Council Offices, Northwich, for the inspection of all persons desirous of tendering for about 2,140 super. yds. of sett paving in Witton-street, Northwich. Mr. J. Arthur Cowley, Clerk of the Council, Council Offices, Northwich.

NOVEMBER 15.—**Spennymoor.**—MAKING-UP.—The Spennymoor U.D.C. invite tenders for the making of back Coulson-street, Spennymoor. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. C. R. Spencer, Surveyor to the Council, Silver-street, Spennymoor.

NOVEMBER 16.—**Aldershot.**—MAKING-UP.—Aldershot U.D.C. invite tenders for the making-up of a part of St. Joseph's-road. Plans, etc., may be seen, and full particulars obtained, on application to Mr. Fred C. Uren, A.M.Inst.C.E., Surveyor to the Council.

NOVEMBER 16.—**Filey.**—WATER MAINS.—Filey U.D.C. Water and Gas Committee invite tenders for the excavation of a trench for a water main about 4,450 lin. yds. in length, extending from the reservoirs at Hunmanby to the town of Filey, and for other work. Specifications can be seen at the office of the Council, Queen-street, Filey, and particulars obtained from Mr. Henry Tobey, Engineer, Malton, Yorks.

NOVEMBER 16.—**Filey.**—WATER MAINS.—Filey U.D.C. Water and Gas Committee invite tenders for the supply of about 4,400 yds. of 8-in. cast-iron water mains, etc. Specification may be inspected at the offices of the Council, Filey, or a copy will be forwarded by Mr. Henry Tobey, Engineer, Malton, Yorkshire, on receipt of 4s. 6d. (not returnable).

NOVEMBER 16.—**Glastonbury.**—WATER MAIN.—For 80 yds. of 6-in. cast-iron main, constructing brick inlet well, and other works, at the Edgarley Reservoir, for the Corporation. Copies of plan, etc., can be obtained at the office of Mr. George Alves, Borough Surveyor, Glastonbury, on payment of 1*l.* 1s.

✱ NOVEMBER 16.—**London, E.C.**—STONE PAVING.—The Streets Committee of the Corporation of London invite tenders for repairs and maintenance of all works of stone paving in the carriageways and footways of the City. See advertisement in this issue for further particulars.

NOVEMBER 16.—**Wallingford.**—SEWAGE WORKS.—The R.D.C. of Wallingford invite tenders for the work required in connexion with the extension of the sewage farm, including the construction of a concrete carrier, together with valves, etc.. Plan, etc., may be seen, and copies of the specification, etc., may be obtained, at office of Mr. G. F. Slade, Clerk to the R.D.C. of Wallingford, 7, St. Martin's-street, Wallingford, Berks, upon the deposit of 1*l.* 1s.

NOVEMBER 17.—**Bury.**—CULVERTS.—The Corporation of Bury invite tenders for the construction of about 50 yds. of stone and brick and concrete culverts at Goodlad-street and Walshaw-road. Drawings may be seen, and specifications, etc., obtained upon application to Mr. Arthur W. Bradley, A.M.Inst.C.E., Borough Engineer and Surveyor, Bank-street, Bury.

NOVEMBER 17.—**Horwich.**—STREET WORKS.—Horwich U.D.C. invite tenders for the paving, sewering, levelling, flagging, etc., of several streets in the Beehive District in accordance with plans, etc., prepared by the Surveyor, Mr. Thos. Green, which may be inspected at offices of Mr. Peter Taberner, Clerk to the Council, Council Offices, Horwich.

NOVEMBER 17.—**Kingswood.**—SEWERAGE WORKS.—Kingswood U.D.C. invite tenders for the laying of about 120 yds. of 9-in. sanitary pipe sewers, with manholes and ventilators, near the Reformatory-path. Also, for about 362 yds. of 9-in. sanitary pipe sewers, with manholes and ventilators, on Holly Hill-road, in two separate contracts. Plans, etc., may be seen at the Council's Office, Kingswood, by applying to the Surveyor, Mr. W. D. Bell.

NOVEMBER 17.—**Swinton.**—MAKING-UP.—For making-up of Albert-street and part of Walker-street, for the U.D.C. The plans, etc., may be seen, and forms of tender, etc., obtained from Mr. Robert Fowler, C.E., Engineer and Surveyor, Council Offices, Swinton, near Rotherham, upon payment of a deposit of 10s. for each street.

ROADS, etc.—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

NOVEMBER 17.—**Wrexham.**—ROAD.—For construction of an approach road to Gresford new Cemetery, for the R.D.C. Plans, etc., may be seen at the office of the Engineer, Mr. J. Price Evans, Argyle-chambers, Wrexham.

NOVEMBER 18.—**Leeds.**—SEWERAGE WORKS.—The Sewerage Committee invite tenders for sewerage works. Drawings may be seen, and forms of tender, etc., may be obtained, on application to Mr. W. T. Lancashire, City Engineer, Municipal Buildings, Leeds, on payment of a deposit of 3*l.* 3s.

NOVEMBER 22. — **Northwood.** — STREET WORK.—Ruislip-Northwood U.D.C. invite tenders for the making-up of the private street known as Carew-road, Northwood. Plans may be seen, and specification, etc., obtained, from Mr. W. Louis Carr, the Council's Surveyor, at Council Offices, Northwood, Middlesex.

NOVEMBER 22. — **Sirhowy.** — SEWERS. — Mynyddislwyn U.D.C. invite tenders for the construction of the subsidiary sewers in the Sirhowy Valley portion of their district. Plans may be seen, and bills of quantities, etc., obtained from the Engineer, Mr. Harold Seymour, M.I.Mun.E., at the Council Offices, Tredegar Junction, on payment of 2*l.* 2s.

* NOVEMBER 22.—**Wandsworth.**—ROAD-MAKING.—The Wandsworth B.C. invite tenders for making-up and paving new streets. See advertisement in this issue for further particulars.

NOVEMBER 23.—**Grimsby.**—SEWERAGE WORKS.—For about 1,900 yds. of 9 in. by 6 in. stoneware and cast-iron pipe sewers, with manholes, etc., together with sewage disposal works, for the R.D.C. Drawings, etc., may be seen, and bills of quantities obtained, at the office of the Surveyor, Mr. Albert Hobson, 198, Legsby-avenue, Grimsby, on payment of 2*l.* 2s.

* NOVEMBER 24. — **Hammersmith, W.** — ROAD-MAKING.—The Hammersmith B.C. invite tenders for making-up and paving Dunraven-road (section 3). See advertisement in this issue for further particulars.

NOVEMBER 25.—**Sunderland.**—TRAMWAY TRACK.—The Corporation of Sunderland invite tenders for (1) foundations and track (about 853 lin. yds.); (2) paving work. The specification, etc., can be obtained on application to the joint engineers, Mr. John W. Moncur, A.M.Inst.C.E., Borough Engineer, Town Hall, and Mr. Archibald R. Dayson, M.Inst.E.E., Tramways General Manager and Engineer, Tramways Offices, on payment of a deposit of 1*l.* 1s. for each specification.

NOVEMBER 29.—**Grange-over-Sands.**—MAKING-UP.—Grange-over-Sands U.D.C. invite tenders for the making-up of Fernhill-road, in accordance with the plans, etc., prepared by their Surveyor. Forms of tender can be obtained, and the plans, etc., inspected, at the Council Offices, Grange-over-Sands.

NOVEMBER 30.—**Market Harborough.**—SEWAGE DISPOSAL.—The Market Harborough U.D.C. invite tenders for extensions to their sewage disposal works. Plans may be seen, and copies of general conditions, etc., may be obtained, at the Council Offices on payment of 5*l.* 5s.

STONES, MATERIAL, AND STORES.

NOVEMBER 15.—**Prestwich.**—SETTS.—The U.D.C. of Prestwich invite tenders for the supply of 380 tons of granite setts, 5 in. by 4 in. Mr. Lewis A. Orford, Law Clerk to the Council, Council Offices, Prestwich, near Manchester.

NOVEMBER 15.—**Woodstock.**—HARTSHILL, CLEEHILL, LEICESTERSHIRE GRANITE, AND ROWLEY REGIS OR OTHER HARD STONE.—The R.D.C. of Woodstock invite tenders for the supply of stone. Forms of tender can be obtained on application at office of Mr. A. G. Higgs, Clerk to the District Council, Woodstock.

NOVEMBER 16.—**Chorley.**—FIRECLAY GOODS.—The Corporation invite tenders for the supply and delivery at their Gasworks of fireclay goods required during the year 1910. Specification, etc., may be obtained from Mr. J. W. Allin, Gas Engineer.

NOVEMBER 16. — **Lambeth.** — GRANITE. — The Guardians of the Poor of the Parish of Lambeth invite tenders for the supply of 200 tons of waste and broken pieces of Jersey or Guernsey granite for breaking, to be delivered at their stone yard, in Wincott-street, Kennington-road, S.E. Mr. James L. Goldspink, Clerk, Guardians' Board-room and Offices, Brook-street, Kennington, S.E.

NOVEMBER 17. — **Hollingbourn.** — GAS MAINS.—Hollingbourn R.D.C. invite tenders for 4 tons of 6-in. cast-iron coated gas mains, to be delivered at Hollingbourn Station. Mr. H. J. Bracher, Clerk, 33, Earl-street, Maidstone.

NOVEMBER 17. — **Manchester.** — GOODS. — The Cleansing Committee of the Manchester Corporation invite tenders for twelve months' supplies. Specifications may be obtained from Mr. R. Williamson, Superintendent of the Cleansing Department, Town Hall, Manchester.

NOVEMBER 18.—**Deal.**—GRANITE.—The Corporation of Deal invite tenders for the supply of Guernsey granite. Specification and form of tender to be had from Mr. Thos. C. Golder, Borough Engineer and Surveyor, 23, Queen-street, Deal.

NOVEMBER 18. — **Wandsworth.** — 200 TONS OF GUERNSEY GRANITE SPALLS.—The Guardians invite tenders for the supply of 200 tons of Guernsey granite spalls, to be delivered at the Workhouse, Garratt-lane, Wandsworth. Mr. F. W. Piper, Clerk, Union Offices, St. John's-hill, Wandsworth, S.W.

NOVEMBER 20.—**Handsworth.**—GOODS, ETC.—The U.D.C. invite tenders for supplying goods and materials during the year ending December 31, 1910. Conditions of contract and specification may be seen, and forms of tender obtained, on application to the Surveyor, at the Council House, Handsworth.

NOVEMBER 22.—**Hull.**—MATERIALS.—The Corporation invite tenders for scavenging and watering, cartage, iron and steel, castings, cement, etc. Forms of tender, etc., may be obtained at the City Engineer's Office.

* NOVEMBER 22. — **London, etc.** — STORES AND MATERIALS.—The Port of London Authority invite tenders for supplies of materials and stores. See advertisement in this issue for further particulars.

NOVEMBER 23. — **West Hartlepool.** — ROAD MATERIALS AND SEWER PIPES.—The Corporation invite tenders for the supply of Yorkshire and concrete kerbstone and flags, scoriæ and whinstone channel blocks and paving setts; hand, machine, and unbroken whinstone; pitch, tar, and lime. Specifications, etc., can be obtained at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings.

NOVEMBER 23. — **West Hartlepool.** — YEARLY STORES. — The Corporation invite tenders for the supply of goods and materials. Specifications, etc., can be obtained at office of Mr. Nelson F. Dennis, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Buildings, and samples of stores seen at the Corporation Depôt.

NOVEMBER 24.—**Birmingham.**—ROAD MATERIAL.—Warwickshire C.C. invite tenders for the supply of road material (broken and unbroken), delivered at the various railway stations and wharves in the county. Forms to be obtained from the County Surveyor, 6, Waterloo-street, Birmingham.

NOVEMBER 24.—**Erdington.**—CONCRETE FLAGS.—Erdington U.D.C. Highways and Buildings Committee invite tenders for the supply of 15,500 sq. yds., or thereabouts, of concrete flags. Copies of specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Engineer and Surveyor, Council House, Erdington.

NOVEMBER 24.—**Erdington.**—STONE.—Erdington U.D.C. Highways and Buildings Committee invite tenders for the supply of broken and unbroken stone. Copies of the specification, etc., may be obtained upon application to Mr. Herbert H. Humphries, Surveyor to the Council, Council House, Erdington.

NOVEMBER 25.—**Chatham.**—ANNUAL CONTRACTS.—The T.C. invite tenders for the supply of goods and materials during the year. Specifications, etc., can be obtained, and samples seen, on application at the Borough Surveyor's Office, Town Hall, Chatham.

NOVEMBER 25.—**Wakefield.**—STORES.—The Wakefield and District Light Railway Company invite tenders for the supply of stores. Schedules may be obtained from the Central Offices, Belle Isle, Wakefield. A charge of 1s. (which is not returnable) is made for each schedule, in duplicate, and a remittance covering the charge for schedules required must be sent with each application.

NOVEMBER 25. — **York.** — STORES.—North-Eastern Railway Directors invite tenders for the supply during the six or twelve months of articles. Specification, etc., may be obtained on application to Mr. E. H. Clark, Stores Superintendent, Gateshead.

NOVEMBER 25. — **York.** — STORES.—North-Eastern Railway Directors invite tenders for telegraph stores. Forms of tender may be obtained on application to Mr. C. H. Ellison, the Company's Telegraph Superintendent, York.

NOVEMBER 27.—**Hampton Wick.**—GRANITE.—The U.D.C. invite tenders for the supply of about 200 yds. of granite, to be delivered by barge alongside the Hampton Wick Wharf as required by the Surveyor. No special form.

NOVEMBER 29. — **Dublin.** — STORES. — The Dublin United Tramways Company (1896), Ltd., invite tenders for the supply of general stores. Forms of tender (price 2s. each), conditions, etc., can be obtained, and patterns seen, at the Secretary's office, 9, Upper Sackville-street, from November 1 to 13

NOVEMBER 30. — **Enniskillen.** — STORES. — Sligo, Leitrim, and Northern Counties Railway Company invite tenders for the supply of goods required for the year 1910. Forms can be had from Mr. John Duff, Secretary, Company's Office, Enniskillen.

DECEMBER 1. — **Dublin.** — STORES, ETC. — The Directors of the City of Dublin Steam Packet Company invite tenders for the supply of brass and copper work, paints, timber, etc., for twelve months. Specifications can be seen at the Company's Office, 9, Regent-road, Liverpool.

DECEMBER 8. — **Dublin.** — ARTICLES.—The Dublin Port and Docks Board invite proposals to supply articles from January 1 next to December 31. Forms of proposal may be had at office of Mr. N. Proud, Secretary, Port and Docks Office, Westmoreland-street, Dublin.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CORRESPONDENCE AND GENERAL CLERK	Hackney Borough Council	130*l.* per annum	Nov. 22
*ARCHITECT FOR ELEMENT. AND SECONDARY SCHOOLS	West Riding C.C.	350*l.*	Nov. 25

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*EFFECTS OF MANSION, OLD PARK, ENFIELD—On the Premises	Knight, Frank, & Rutley	Nov. 16, etc.
*NEW WOODWORKING MACHINERY, HAYES, MIDDLESEX—On the Premises	Fuller, Horsey, Sons, & Cassell	Nov. 25
*STEAM MOTOR WAGONS, BROMLEY-BY-BOW, E.—On the Premises	Fuller, Horsey, Sons, & Cassell	do.
*BUILDING SITES, LANDS, AND HOUSES, SELSEY-ON-SEA—Anchor Hotel, Chichester	Wyatt & Son	Dec. 1
*BUILDING SITE, TOTTENHAM COURT-ROAD—At the Mart	H. E. Foster & Cranfield	do.
*FAMILY MANSION, HOME FARM, AND BUILDING SITES, ANGLESEY—At the Mart	J. A. Lumley & Dowell	Dec. 7
*FREEHOLD BUILDING LAND, BEXHILL-ON-SEA—Granville Hotel, Bexhill-on-Sea	S. Walker & Son	Dec. 15

Patents.

APPLICATIONS PUBLISHED.*

20,753 of 1908.—Arthur Greenwood: Indicators for use in connexion with lavatories, bath-rooms, and the like.

21,367 of 1908.—William Webb and Warnie Waldo Hildreth: Wrenches.

21,500 of 1908.—Herbert Plum: Saw-sharpening machines.

21,588 of 1908.—Henry Ismay Moralee Ross: System of double ventilation.

21,593 of 1908.—William Wright Vincent: Lacquering or otherwise coating surfaces.

22,018 of 1908.—Jean Kunz: Mechanical hammers.

23,251 of 1908.—Albert Brooker: Window-sash fastener.

26,886 of 1908.—William Sutherland Chisholm: Devices for punching tubes and the like.

204 of 1909.—Thomas Wesley Jenks: Reinforcing bars for concrete structures.

918 of 1909.—Lewis James Nurse Gorton: Casement windows.

4,074 of 1909.—Harold Brindley Lancaster and Robert Taylor: Wooden seats for water-closets.

4,737 of 1909.—Fletcher, Russell, & Co., Ltd., and Alexander Neil: Kitchen ranges.

5,679 of 1909.—George Henry Pedlar: Metallic roofing shingles.

5,762 of 1909.—Mark Cowley: Lock staple.

7,414 of 1909.—Niels Marius Mogensen: Pipe wrenches.

16,711 of 1909.—William Herbert Percy: Reinforced concrete piles.

*All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

October 20.—By WOODS & Co. (at Northampton).

Northampton.—Kettering-rd., freehold business premises	£1,200
71, St. Giles-st., f.	1,085
30, Margaret-st., f.	195
76 and 78, Somerset-st., f.	315
61, Adelaide-st. (s.). f.	200
18, Cambridge-st., f.	165
107, Stanhope-rd., f.	175
67 and 69, Oliver-st., f.	410

October 27.—By PHILIP E. HILL (at Newport).

Blaina, Mon.—Griffiths Brothers Brewery, with 41 freehold and leasehold hotels and public-houses, cottages, etc. (in lots)	181,910

October 28.—By WALLER & KING (at Southampton).

Bitterne, Hants.—Commercial-st., Belgrave and two cottages, f.	355
Sholing, Hants.—Two cottages, f.	120
Hedge End, Hants.—Butts-rd., five cottages, f.	475
Hamble, Hants.—Two cottages, f.	200

October 30.—By G. B. HILLIARD & SON (at Colchester).

East Bergholt, Suffolk.—Church Gate-walk, two houses, f., y.r. 39*l.*	635
Stratford St. Mary, Suffolk.—Upper-st., house and two cottages, f.	370

November 1.—By WATERER & SONS.

Byfleet, Surrey.—Church-la., two cottages, store, stabling, and 5 a. 1 r. 21 p., c., y.r. 70*l.*	1,175
Addlestone, Surrey.—Lincombe, f., y.r. 70*l.*	1,020
Marylebone.—16, Allsop-st., u.t. 12 yrs., g.r. 8*l.*, y.r. 35*l.*	135

November 2.—By C. W. DAVIES & SON.

Islington.—4, Sudeley-st., u.t. 17 yrs., g.r. 5*l.*, e.r. 36*l.*	120

By DUNCAN & KIMPTON.

Ilford.—1 to 10, Horns-rd., f., w.r. 131*l.* 12s. 8d.	1,430
Marks Gate, Essex.—1, 2, and 3, Lawrence-cottages, f., w.r. 38*l.* 4s.	400
Dagenham, Essex.—1, 2, and 3, Crown-st., f., w.r. 30*l.* 11s.	400

By LEOPOLD FARMER & SONS.

St. John's Wood.—12, Mortimer-cres., u.t. 41 yrs., g.r. 15*l.*, p.	800

By FORTESCUE & Co.

Leytonstone.—495 and 497, High-rd. (s.), f., y.r. 80*l.*	850
Plaistow.—18, 20, and 22, Terrace-rd., f., w.r. 96*l.* 4s.	860

By KIDWELL & SON (at Chatham).

Chatham.—Henry-st., f.g. rents 12*l.* 12s., reversion in 26 yrs.	495
Halling.—Main-rd., freehold house, w.r. 15*l.* 12s.	146
Snodland.—5, Malling-rd. (s.), f., y.r. 20*l.*	335

By CHAPMAN & MARTIN (at Lewes).

Lewes, Sussex.—8, 10, and 12, Sun-st., f., w.r. 37*l.* 14s.	550
Southover, Sussex.—37, High-st., f.	195

November 3.—By H. DONALDSON & SONS.

Dalston.—34 and 38, Suffolk-rd., u.t. 36 yrs., g.r. 6*l.* 15s., w.r. 72*l.* 16s.	260

By SALTER, REX, & Co.

City.—66, Ludgate-hill, f.g.r. 200*l.*, reversion in 59 yrs.	6,600

By E. & S. SMITH.

Clerkenwell.—34 and 35, Baker-st., u.t. 12 yrs., g.r. 12*l.* 12s., y.r. 85*l.*	300

November 4.—By DRYSDALE, NURSE, & Co.

Stamford Hill.—23, Cadoxton-av., f., w.r. 37*l.* 14s.	370

By WILLIAM WESTON.

Notting Hill.—74, Wornington-rd., u.t. 64½ yrs., g.r. 7*l.* 10s., y.r. 38*l.*	310
98, Lancaster-rd., u.t. 54 yrs., g.r. 10*l.*, y.r. 48*l.*	350
237, Portobello rd. (s.), u.t. 51½ yrs., g.r. 10*l.*, y.r. 48*l.*	220
Marylebone.—36, Bendall-st. (s.), u.t. 53¾ yrs., g.r. 20*l.*, y.r. 60*l.*	330
Ealing.—32, Windsor-rd., u.t. 53 yrs., g.r. 7*l.* 7s., y.r. 45*l.*	320

By BEARD & SON.

Notting Hill.—7, 37, and 39, Cambridge-gdns., u.t. 54 yrs., g.r. 35*l.*, gross rental 292*l.*	1,190
68, Cornwall-road, f., gross rental 90*l.*	600
307, Ladbroke-gr., u.t. 58 yrs., g.r. 10*l.*, gross rental 76*l.* 14s.	275
47, Kensington Park-rd. (s.), u.t. 53 yrs., g.r. 8*l.*, gross rental 52*l.*	240
Bayswater.—7, Colville-ter., u.t. 51 yrs., g.r. 16*l.*, gross rental 122*l.* 6s.	390

By JENKINS, SONS, & WEBSTER (at New Cross).

Deptford.—49 to 75 (odd), Oscar-st., u.t. 28 yrs., g.r. 11*l.*, w.r. 294*l.*	2,145
3 to 11 and 12A, Atkinson-st., u.t. 35 yrs., g.r. 15*l.* 9s., w.r. 196*l.* 4s.	1,600

November 5.—By FISHER, STANHOPE, & Co.

Islington.—34, Elmore-st., u.t. 43 yrs., g.r. 6*l.* 6s., y.r. 36*l.*	250

By E. & R. SOLOMONS.

Shepherd's Bush.—9, Melrose-gdns, u.t. 67 yrs., g.r. 6*l.*, e.r. 45*l.*	325

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	7	0	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	" delivered
Flettons	1	5	0	" at railway depôt.
Best Fareham Red	3	12	0	" " "
Best Red Pressed Ruabon Facing	5	0	0	" " "
Best Blue Pressed Staffordshire	3	15	0	" " "
Do. Bullnose	4	0	0	" " "
Best Stourbridge Fire Bricks	3	14	0	" " "
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	17	6	" " "
Headers	10	7	6	" " "
Quoins, Bullnose, and Flats	14	7	6	" " "
Double Stretchers	16	7	6	" " "
Double Headers	13	7	6	" " "
One Side and two Ends	17	7	6	" " "
Two Sides and one End	18	7	6	" " "
Splays and Squints	15	17	6	" " "
Best Dipped Salt Glazed Stretchers	10	17	6	" " "
Headers	10	7	6	" " "
Quoins, Bullnose, and Flats	14	7	6	" " "
Double Stretchers	16	7	6	" " "
Double Headers	13	7	6	" " "
One Side and two Ends	17	7	6	" " "
Two Sides and one End	18	7	6	" " "
Splays and Squints	15	17	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

	s.	d.	
Ancaster in blocks	1	10	per ft. cube, deld. ry. dep.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Red Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "
Scappled random blocks	3	0	per ft. cube. "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In.	In.	£	s.	d.	
20×10	best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12	" "	13	17	6	" "
20×10	first quality "	13	0	0	" "
20×12	" "	13	15	0	" "
16×8	" "	7	5	0	" "
22×10	best blue Portmadoc	12	12	6	" "
16×8	" "	6	12	6	" "
20×10	best Eureka unfading green	15	17	6	" "
20×12	" "	18	7	6	" "
18×10	" "	13	5	0	" "
16×8	" "	10	5	0	" "
20×10	permanent green	11	12	6	" "
18×10	" "	9	12	6	" "
16×8	" "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000 at rly. dep.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	14	0	0	15	10	0
Deals: best 3 by 9	13	10	0	14	10	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	10	0	12	10	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best.		
Battens: seconds	0	10	0	"		
2 in. by 4 in. and 2 in. by 6 in.	9	10	0	10	1	0
2 in. by 4½ in. and 2 in. by 5 in.	9	0	0	10	0	0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.		
¾ in.	1	0	0	"		

	At per load of 50 ft.					
Fir timber: best middling Danzig or Memel (average specification)	5	0	0	5	10	0
Seconds	4	10	0	5	0	0
Small timber (8 in. to 10 in.)	3	17	6	4	0	0
Small timber (6 in. to 8 in.)	3	5	0	3	10	0
Swedish balks	2	12	6	3	0	0
Pitch-pine timber (30 ft. average)	4	10	0	5	5	0

JOINERS' WOOD.	At per standard.					
White Sea: first yellow deals, 3 in. by 11 in.	24	10	0	25	10	0
3 in. by 9 in.	22	10	0	23	10	0
Battens 2½ in. and 3 in. by 7 in.	17	0	0	18	0	0
Second yellow deals, 3 in. by 11 in.	19	0	0	20	0	0
3 in. by 9 in.	18	0	0	19	10	0
Battens, 2½ in. and 3 in. by 7 in.	14	0	0	15	0	0
Third yellow deals, 3 in. by 11 in. and 9 in.	14	0	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	10	0	12	10	0
Petersburg: first yellow deals, 3 in. by 11 in.	21	10	0	22	10	0
Do. 3 in. by 9 in.	18	10	0	19	10	0
Battens	14	0	0	15	0	0
Second yellow deals, 3 in. by 11 in.	16	10	0	17	10	0
Do. 3 in. by 9 in.	15	0	0	16	0	0
Battens	11	10	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	10	0	14	10	0
Do. 3 in. by 9 in.	13	0	0	14	0	0
Battens	10	10	0	11	0	0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	15	0	0	16	0	0
" " 3 in. by 9 in.	14	0	0	14	10	0
Battens	11	10	0	12	10	0
Second white deals, 3 in. by 11 in.	14	0	0	15	0	0
" " 3 in. by 9 in.	13	0	0	14	0	0
Battens	10	10	0	11	0	0
Pitch-pine: deals	19	0	0	21	0	0
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	"		
Seconds, regular sizes	33	0	0	"		
Oddments	28	0	0	"		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs— Large, per ft. cube	0	3	0	0	3	9
Small " "	0	2	6	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¼ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	10	0	1	1
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0
Teak per load	18	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0

Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6

WOOD (*continued*).

JOINERS' WOOD (*continued*)—	Per square. £ s. d.	£ s. d.
Prepared Flooring, etc. (*continued*)		
1 in. by 7 in. " "	0 14 0 ...	0 18 0
¼ in. by 7 in. white " "	0 10 0 ...	0 11 6
1 in. by 7 in. " "	0 12 9 ...	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 0 0 ...	7 10 0
Compound Girders, ordinary sections	9 0 0 ...	10 0 0
Steel Compound Stanchions	11 0 0 ...	12 0 0
Angles, Tees, and Channels, ordinary sections	9 0 0 ...	10 0 0
Flitch Plates	9 0 0 ...	9 10 0
Cast Iron Columns and Stanchions including ordinary patterns	7 10 0 ...	8 10 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0 ...	9 0 0
Staffordshire Crown Bars, good merchant quality	8 15 0 ...	9 5 0
Staffordshire "Marked Bars"	10 10 0 ...	—
Mild Steel Bars	8 15 0 ...	9 5 0
Hoop Iron, basis price	9 5 0 ...	9 10 0
" " Galvanised	17 0 0 ...	—

(*And upwards, according to size and gauge.)

Sheet Iron, Black—		
Ordinary sizes to 20 g.	9 15 0 ...	—
" " 24 g.	10 15 0 ...	—
" " 26 g.	12 5 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 0 0 ...	—
Ordinary sizes to 22 g. and 24 g.	15 10 0 ...	—
" " 26 g.	16 10 0 ...	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	18 0 0 ...	—
" " 22 g. and 24 g.	18 10 0 ...	—
" " 26 g.	20 0 0 ...	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14 10 0 ...	—
" " 22 g. and 24 g.	14 15 0 ...	—
" " 26 g.	16 5 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12 0 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	13 0 0 ...	—
" " " 26 g.	15 0 0 ...	—
Cut Nails, 3 in. to 6 in.	10 10 0 ...	11 0 0

(Under 3 in., usual trade extras.)

LEAD, &c. Per ton, in London.

	£ s. d.	
LEAD—Sheet, English, 3lb. and up.	16 10 0 ...	—
Pipe in coils	17 0 0 ...	—
Soil pipe	20 0 0 ...	—
Compo pipe	20 0 0 ...	—
ZINC—Sheet—		
Vielle Montagne	27 15 0 ...	—
Silesian	27 10 0 ...	—
COPPER—		
Strong sheet per lb.	0 1 0 ...	—
Thin " "	0 1 1 ...	—
Copper nails "	0 0 10 ...	—
Copper wire "	0 0 10 ...	—
BRASS—		
Strong Sheet "	0 0 11 ...	—
Thin "	0 1 0 ...	—
TIN—English Ingots "	0 1 4 ...	—
SOLDER—Plumbers' "	0 0 6½ ...	—
Tinmen's "	0 0 9 ...	—
Blowpipe "	0 0 11 ...	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4½d. " "
Fluted Sheet, 15 oz	3½d. " "
" 21 oz	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
⅛ "	2⅝d. " "
¼ "	2⅝d. " "
Figured, Oxford Rolled and Oceanic "Glass, white	3½d. " "
¼ " " tinted	5d. " "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 7
" " " in barrels	"	0 2 8
" " " in drums	"	0 2 11
Boiled " " in barrels	"	0 2 11
" " " in drums	"	0 3 2
Turpentine in barrels	"	0 3 5
" in drums	"	0 3 7
Genuine Ground English White Lead	per ton	20 0 0
Red Lead, Dry	"	19 10 0
Best Linseed Oil Putty	per cwt.	0 7 0
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c. Per gallon.

	£ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted.* † Denotes *provisionally accepted.***

BODMIN.—For erecting East Cornwall Hospital, Rhind-street. Mr. Morley B. Collins, architect, Clinton-road, Redruth:—

Trehane & Son	£3,130	W. C. Hodge	£2,475
C. F. Ham	2,735	Stanbury	2,449
R. Grose	2,700	Brown Bros.	2,443
Lapthorne & Co.	2,598	W. E. Bennett, Bodmin*	2,225
Brown & Son	2,545		

BOURNEMOUTH.—For laying about 230 squares of 1-in grooved and tongued desiccated teak decking with metal heading joints, for the Town Council. Mr. F. W. Lacey, M.Inst.C.E., Borough Engineer, Municipal Offices, Bournemouth:—

Bowman & Sons, London and Bournemouth* £1,090

COBHAM.—For erecting a steam roller house, for the Strood Rural District Council. Mr. L. Randerson, District Surveyor, Meopham, Gravesend:—

G. Gates & Sons, Frindsbury, Rochester* .. £225

CROSBY.—For erecting a dwelling-house, shop, and business premises. Mr. W. H. Buttrick, architect, Scunthorpe:—

Burnett	£1,025	Smith Bros.	£759
W. Pallister	930	J. E. Buttrick	758
H. G. Thompson	825	D. Quibell*	675

[All of Scunthorpe.]

GERRARD'S CROSS.—For erection of a house at Gerrard's Cross, Bucks:—

Musselwhite & Sapp	£1,836	G. Bollom	£1,674
H. Brown	1,829	Mattock & Parsons,	
J. Bailey	1,819	165, Grays' Inn-road, W.C.*	1,671
Y. J. Lovell & Son	1,787		
J. Mead	1,730		

LLANDAFF.—For street improvement works in Whitchurch-road, Gabalfa, for Llandaff and Dinas Powis Rural District Council. Mr. J. Holden, A.M.Inst.C.E., Engineer, 20, Park-place, Cardiff:—

C. Davies	£663 8 6	E. Rees, The Elms,	
T. R. Williams	632 7 5	Whitchurch*	£591 1 8

LONDON.—For the paving and sewer, etc., works in connexion with the widening of Belvedere-road between Westminster Bridge-road and Guildford-street, for the London County Council:—

S. Kavanagh & Co.	£4,764 5 3
W. H. Wheeler & Co., Ltd.	4,619 2 7
F. & H. F. Higgs	4,476 0 0
Price & Reeves	4,393 15 3
H. Woodham & Sons	4,168 10 3
W. Muirhead & Co.	4,168 6 2
C. Ford	3,758 1 4
J. Mowlem & Co., Ltd.	3,717 7 9
D. R. Paterson, Ltd., Camden Town, N.W.*	3,283 2 7

[The Chief Engineer's estimate, comparable with the above tenders, is £3,967 8s.]

LONDON.—For new school, Haverstock Hill, St. Pancras, W., for the London County Council:—

W. Moss & Sons	£13,294 10 6
L. H. & R. Roberts	12,789 0 0
C. F. Kearley	12,769 0 0
J. & M. Patrick	12,672 0 0
T. D. Leng	12,654 0 0
Patman & Fotheringham, Ltd.	12,651 0 0
G. Godson & Sons	12,639 0 0
Treasure & Son, Ltd.	12,630 0 0
E. Triggs	12,343 0 0
McCormick & Sons, Ltd., Northampton-street, Essex-road‡	11,842 0 0

‡ Recommended for acceptance.

[The estimate of the Architect (Education), comparable with the tenders, is £12,678.]

LONDON.—For the erection on the "Acland" site, St. Pancras, N., of handicraft, metal work, and laundry centres, for the London County Council:—

Marchant & Hirst	£3,464	C. R. Price	£2,777
Stapleton & Sons	3,168	Stevens & Sons	2,761
Brand, Pettit, & Co.	3,166	C. F. Kearley	2,757
G. S. S. Williams & Son	3,091	Treasure & Son, Ltd.	2,696
J. Willmott & Sons	2,942	McCormick & Sons, Ltd., Northampton-street, Essex-road*	2,669
Patman & Fotheringham, Ltd.	2,807		

[The estimate of the Architect (Education), comparable with the tenders, is £2,747.]

CHISWICK.—For making-up Park-road (Sections I. and II.), for the Urban District Council:—

	Park-road (Section I.).				Park-road (Section II.).			
	Croft.	Excelsior.	Atlas.	Council's.	Croft.	Excelsior.	Atlas.	Council's.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Adams	1,189 0 0	1,189 0 0	1,172 0 0	1,172 0 0	1,544 0 0	1,544 0 0	1,520 0 0	1,520 0 0
F. G. Brummell, Willesden	993 12 7*	982 18 10	982 18 10	979 7 7	1,325 11 11*	1,311 0 0	1,311 0 0	1,306 3 3
T. Free & Sons, Ltd.	1,305 0 0	1,297 17 6	1,297 17 6	1,297 17 6	1,740 0 0	1,730 5 8	1,730 5 8	1,730 5 8
S. Lane & Co.	1,180 0 0	1,171 0 0	1,161 0 0	—	1,623 0 0	1,613 0 0	1,613 0 0	—
J. Mowlem & Co., Ltd.	1,133 0 0	1,126 0 0	1,133 0 0	1,122 0 0	1,449 0 0	1,440 0 0	1,449 0 0	1,435 0 0
W. Muirhead & Co.	1,197 0 1	1,175 18 7	1,182 19 1	1,175 18 7	1,768 12 2	1,739 9 2	1,746 3 6	1,739 9 2
G. Wimpey & Co.	1,124 0 0	1,117 0 0	1,117 0 0	1,114 0 0	1,435 0 0	1,425 0 0	1,425 0 0	1,421 0 0
H. Woodham & Sons	1,269 0 0	1,269 0 0	1,263 0 0	1,252 0 0	1,721 0 0	1,721 0 0	1,714 0 0	1,699 0 0

CHISWICK.—For making-up Hazledene-road and Grove Park Station-road, for the Urban District Council:—

	Hazledene-road.				Grove Park Station-road.			
	Croft.	Excelsior.	Atlas.	Council's.	Croft.	Excelsior.	Atlas.	Council's.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. Adams	853 0 0	853 0 0	834 0 0	834 0 0	668 0 0	668 0 0	633 0 0	633 0 0
F. G. Brummell, Willesden	741 11 11	720 3 5	720 3 5	716 7 3	547 17 8	544 12 8	544 12 8	543 11 0*
Clements, Knowling, & Co., Brentford	697 0 0	730 0 0	730 0 0	675 0 0*	—	—	—	—
T. Free & Sons, Ltd.	870 0 0	870 0 0	870 0 0	870 0 0	720 0 0	717 16 8	717 16 8	717 16 8
H. J. Greenham	719 0 0	751 0 0	751 0 0	695 0 0	—	—	—	—
S. Lane & Co.	—	—	—	790 0 0	594 0 0	594 0 0	594 0 0	—
J. Mowlem & Co., Ltd.	823 0 0	820 0 0	828 0 0	816 0 0	587 0 0	585 0 0	587 0 0	584 0 0
W. Muirhead & Co.	969 6 2	947 9 2	955 1 6	947 9 2	714 3 8	708 0 8	710 1 8	708 0 8
G. Wimpey & Co.	831 0 0	823 0 0	823 0 0	820 0 0	605 0 0	602 10 0	602 10 0	601 10 0
H. Woodham & Sons	975 0 0	975 0 0	969 0 0	957 0 0	659 17 6	659 17 6	658 5 0	655 0 0

LONDON.—For converting the ground floor of the premises into a shop, No. 24, Mare-street (Mare-street and Upper Clapton-road improvement), for the London County Council:—

G. Butters	£250	Johnson, Saul, & Co.	£155
Clarke & Bracey	235	Barrett & Power, Hackney, N.E.*	131
J. Jarvis & Sons	205		

[The estimate of the Council's Valuer, comparable with the above tenders, is £128 10s.]

LONDON.—For repairs to premises, Standish-road and St. Peter's-road, Hammersmith, Western district, for the Metropolitan Water Board:—

Newson & Hawkins	£226 10 0	Bull & Esdaile	£201 0 0
Beeson Bros.	220 13 6	W. Chapman & Sons	189 1 0
Turtle & Appleton	220 1 0	J. Maitland & Sons*	187 10 0
C. Johnson	201 10 0		

LONDON.—For the erection of the superstructure of school buildings to accommodate 857 children, at Storey-street, North Woolwich, for East Ham Education Committee. Mr. R. L. Curtis, Architect, 11 and 12, Finsbury-square, E.C.:—

F. J. Coxhead, Bulwer-road, Leytonstone* £9,882

LONDON.—For the pile foundations required in the erection of school buildings at Storey-street, North Woolwich, for East Ham Education Committee. Mr. R. L. Curtis, Architect, 11 and 12, Finsbury-square, E.C.:—

J. & W. Stewart, Caxton House, Westminster* £1,320

NEWCASTLE-ON-TYNE.—For St. Barnabas Parochial Building. Mr. A. B. Plummer, F.R.I.B.A., Diocesan Architect, Newcastle:—

J. Craven, Westgate-road, Newcastle* £1,684 12 6

ORSETT.—For alterations and additions to Orsett Workhouse, for the Orsett Board of Guardians. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C., and Gate House, Grays, Essex:—

Hibberd & Sons	£6,318	G. Brown	£5,339
Wall & Co.	5,686	Hammond	5,198
T. Bruty	5,621	Archer	5,085
W. Potter	5,514	H. J. Carter	4,913
Sheffield	5,397	Brown Bros.	4,776
Myal & Upson	5,380		

PINNER.—For the erection of four houses, Eastcote-road, Pinner. Mr. J. E. Henderson, architect, Pinner:—

Milsom & Booth, Pinner* £1,380

PORTSMOUTH.—For pulling down old buildings and erecting a new garage and workshop, and repairs to workshops, etc., for Messrs. Linington Bros., Ltd. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

J. Crockerell, Portsmouth* £686

PORTSMOUTH.—For alterations, Duke Connaught Beerhouse, Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

M. F. Corke, Portsmouth* £680

PORTSMOUTH.—For road-making, Copnor, Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

F. Privett, Portsmouth* £497

PORTSMOUTH.—For house at Drayton, near Portsmouth. Messrs. Rake & Cogswell, architects, Prudential-buildings, Portsmouth:—

H. Munday, Havant* £486

ROCHFORD.—For alterations and additions to "Eastwood House," Rochford, Essex, for Mr. Jesse Sawyer. Mr. Laurence T. Weaser, architect and surveyor, 132, High-street, Southend-on-Sea:—

E. Leaney	£1,128	S. Norden, Rochford*	£720
J. Bane	798		

RUGBY.—For headquarters for Howitzer Battery, Rugby. Mr. J. H. Liddington, architect and surveyor, Ketton-chambers, Regent-street, Rugby:—

Linnell & Son	£2,672	J. Hollowell	£2,489
J. Parnell & Son	2,655	C. Cockerell*	2,480
Foster & Dicksee, Ltd.	2,620		

[All of Rugby.]

SOUTHWICK.—For making-up private streets (Southdown-road and road east side of green), for the Urban District Council. Mr. G. W. Warr, Surveyor, Town Hall, Southwick:—

Bostel Bros., Ltd.	£876 18 8	W. Swales	£604 10 9
W. H. Holman & Co.	729 2 4	J. C. Trueman, Ltd.	585 0 0
Peerless, Dennis, & Co.	693 0 0	W. A. McKellar,	547 0 0
G. Gillam	681 14 0	J. Parsons & Sons, Church-road, Hove*	524 0 0
E. H. King	666 4 8		
Woolgar Bros.	665 13 0		

STIFFORD.—For repairs to roofs, spire, and internal work to Stifford Church. Mr. Christopher M. Shiner, A.R.I.B.A., architect, 10, John-street, Adelphi, W.C., and the Gate House, Grays, Essex:—

T. Bruty	£203 10	H. J. Carter	£126 0
J. Hammond & Sons	172 0		

SURBITON.—For private street improvement works at Lenelby-road and Tolworth Park-road, for the Urban District Council. Mr. H. T. Mather, Engineer and Surveyor, Council Offices, Ewell-road, Surbiton:—

Tolworth Park-road.

T. Free & Sons, Ltd.	£1,428 1 2
S. Kavanagh & Co., Surbiton*	1,294 7 8

Lenelby-road.

T. Free & Sons, Ltd.	2,070 1 10
S. Kavanagh & Co., Surbiton*	1,970 9 6

TIDEFORD.—For 134 yds. of stoneware sewer pipes at Tideford St. Germans, and 650 yds. of water pipes at Tideford, for St. Germans Rural District Council. Mr. J. A. Andrews, Surveyor, Southville, Saltash:—

T. Shaddock, 26, Furzehill-road, Plymouth* £197 9

WANSTEAD.—For laying sewer and drains, and for paving, etc., in connexion with "The Elms" improvement, High-street, for the Urban District Council. Mr. C. Herbert Bressey, Surveyor, Council Offices, Wanstead, N.E.:—

	Woodford-road. Kerb, etc.	"The Elms" Improvement.
T. Adams	£324 12 11	£684 6 0
G. J. Anderson	302 0 1	610 13 6
G. Bell & Sons	306 1 1	544 15 7
F. G. Coxhead	386 0 0	557 0 0
W. & C. French, Buckhurst Hill	*278 0 0	*510 0 0
O. T. Gibbons	303 18 8	628 0 5
B. W. Glenney	293 13 2	775 19 11
W. Griffiths & Co.	293 4 9	549 5 6
D. T. Jackson	333 12 4	681 9 4
J. Jackson	288 5 10	498 3 1
W. Manders	300 2 9	586 15 8
Mowlem & Co.	304 0 0	547 0 0
E. Parry & Co.	316 9 1	599 8 1
Parsons & Parsons	282 7 4	528 10 3
P. R. Paul	324 14 5	539 13 7
S. Porter	280 9 9	562 15 2
S. Hanson	292 0 0	619 0 0
Wilson Border Co.	316 1 3	606 11 4

WEST NORWOOD.—For the erection of a home in Wolfington-road, for the Committee of the Jews' Hospital and Orphan Asylum. Messrs. Joseph & Smithem, architects. Quantities by Mr. Chas. W. Latter, 53, Doughty-street, W.C.:—

Trollope & Colls	£7,839	Holliday & Greenwood	£6,977
Cubitt & Co.	7,667	W. Moss & Sons, Ltd.	6,850
Hudson Bros.	7,359	W. Lawrence	6,842
Higgs & Hill, Ltd.	7,184	F. G. Minter*	6,700
J. Greenwood, Ltd.	7,137		
G. E. Wallis & Sons, Ltd.	7,132		

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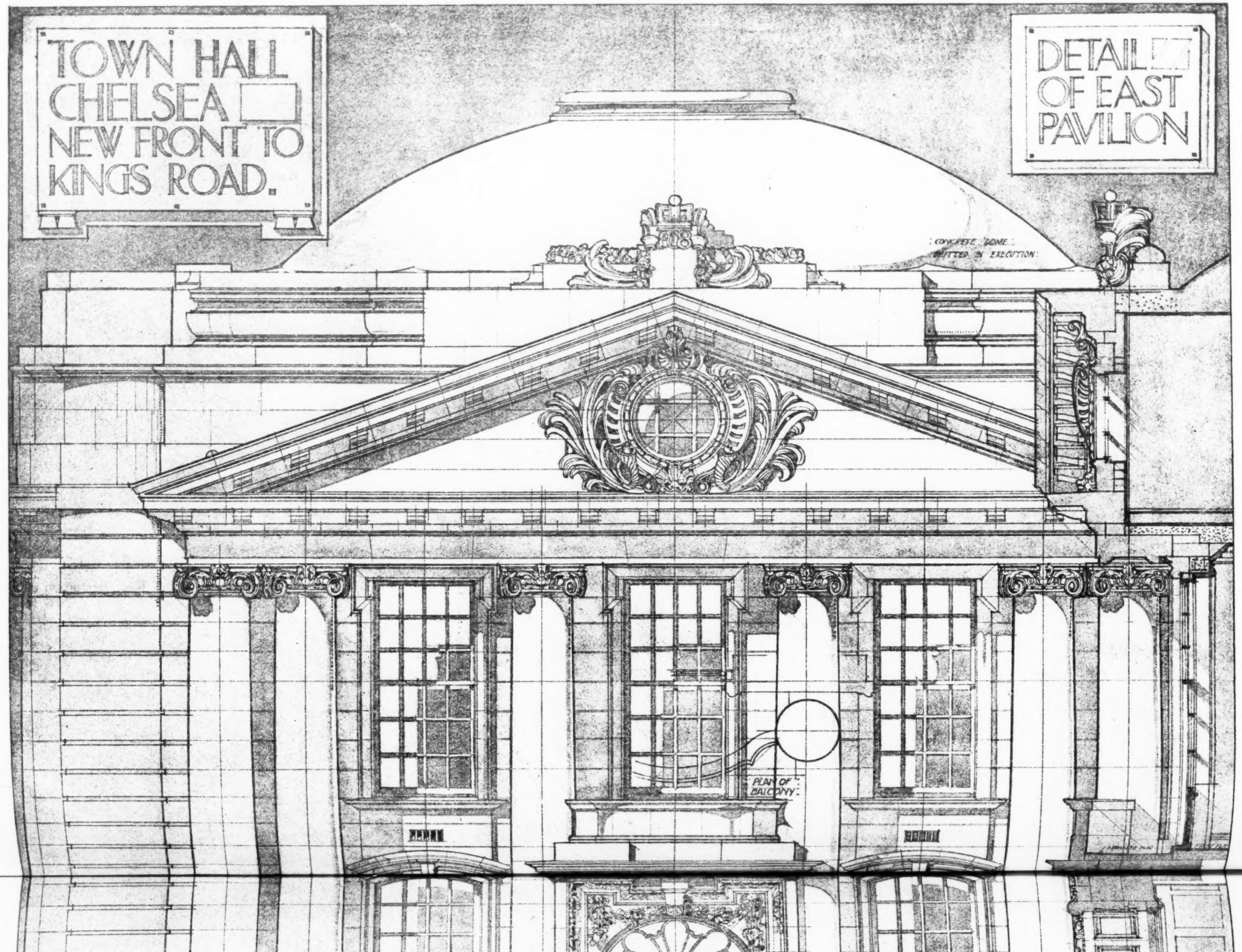
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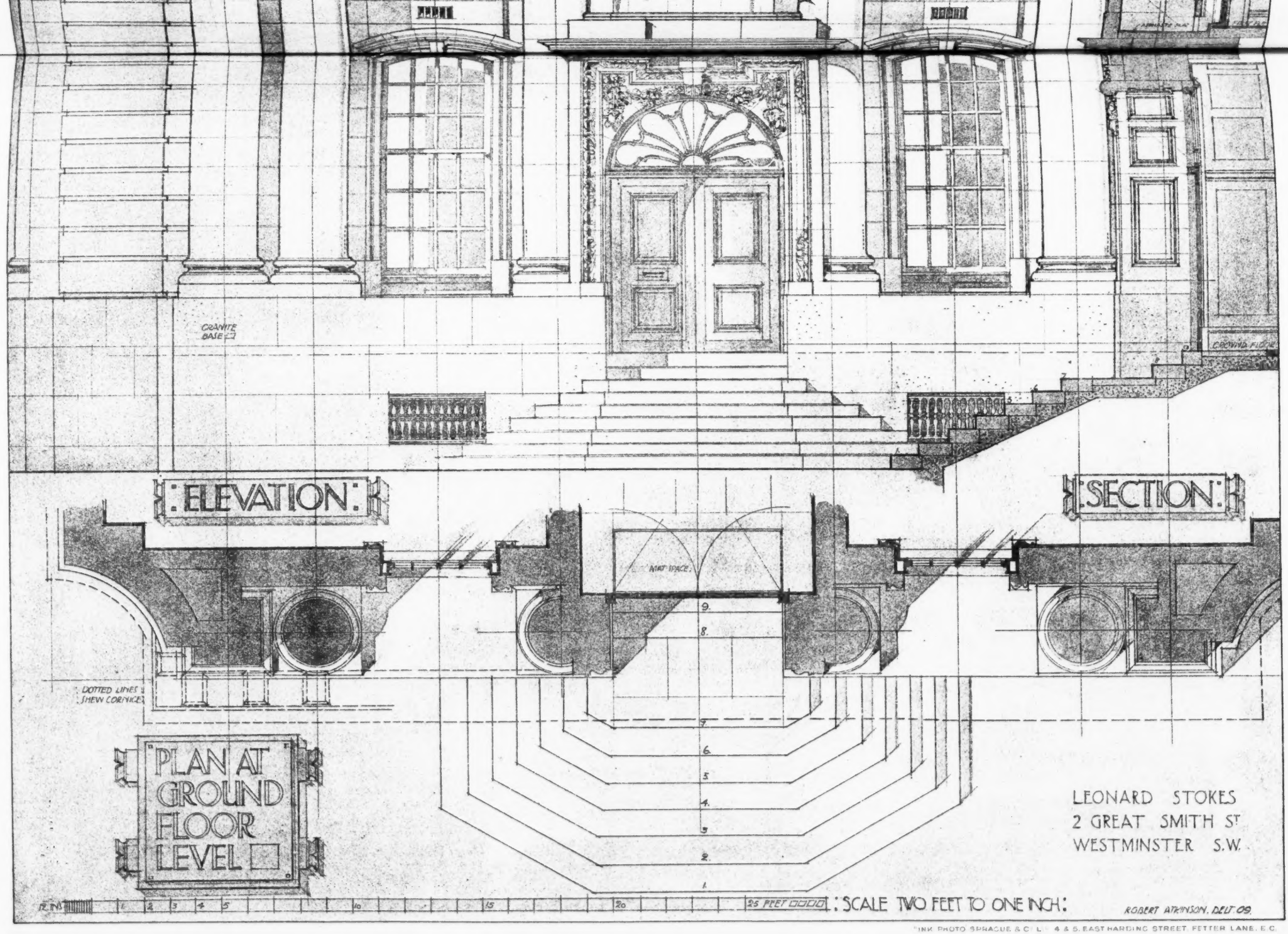

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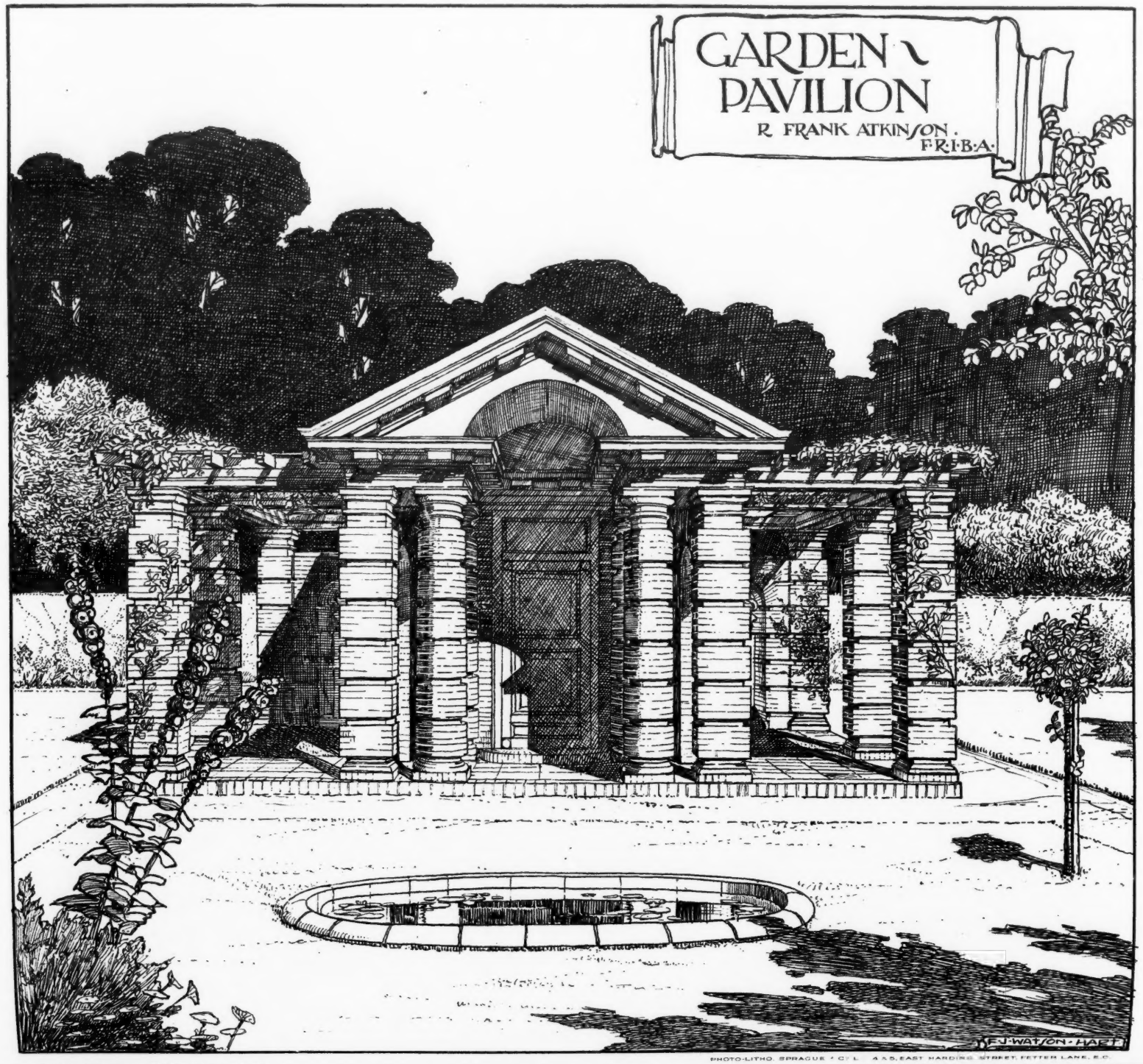

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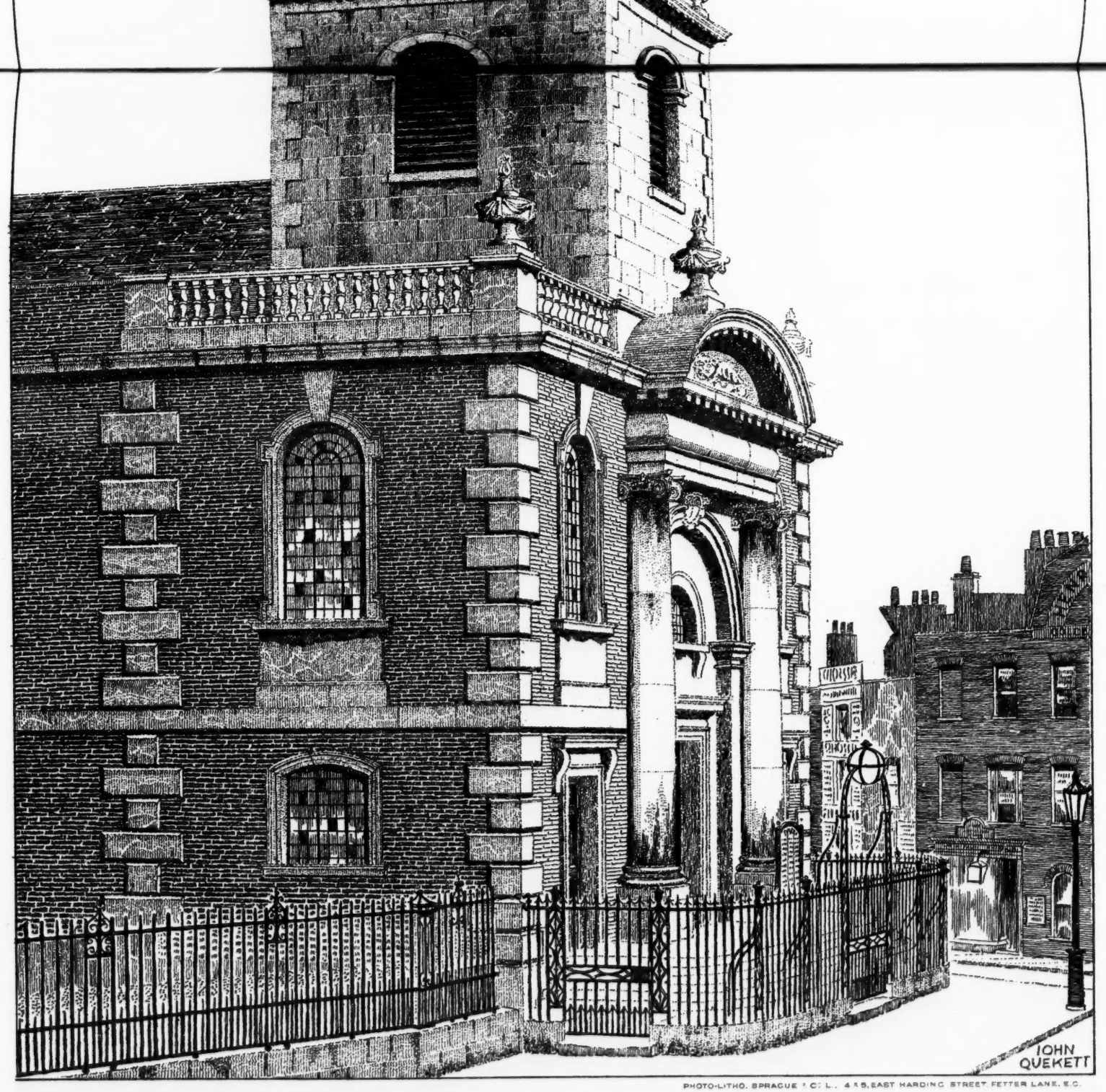

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